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MIND AND MATTER

BY THE SAME AUTHOR.

ESSAYS IN COMMON SENSE PHILOSOPHY

COMMON SENSE ETHICS

COMMON SENSE THEOLOGY

INTRODUCTION TO MODERN PHILOSOPHY

INTRODUCTION TO MODERN POLITICAL THEORY

SAMUEL BUTLER

THE HIGHBROWS

PRISCYLLA AND CHARYBDIS

MIND AND MATTER

THE PHILOSOPHICAL INTRODUCTION TO MODERN SCIENCE

BY

C. E. M. JOAD

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MIND AND MATTER

INTRODUCTION

I SHALL endeavour in the following pages to outline and to examine some of the most important theories current to-day with regard to (1) the nature of mind, (2) the nature of matter, and (3) the relationship between them. The issues raised by these questions are highly controversial, and agreed conclusions are lacking on almost every subject upon which we shall touch. Different groups of thinkers entertain different views, with regard to which, although there may be agreement within each group, it may be confidently asserted that no one group will be found to accept the conclusions of any other. It is indeed improbable that the true nature of mind and matter, and the truth about the way in which they interact will be known until the whole truth about everything is known. As the discovery of the whole truth about everything is highly improbable, and is, in any case, an extremely remote contingency, the problem of the relationship between mind and matter may, for all practical purposes, be regarded as insoluble. Many very interesting theories have, however, been entertained on the subject, and

it will be my object to describe these theories, so far as it is possible to do so, in untechnical language, which will be intelligible to persons having no previous acquaintance with the subject.

Certain conclusions which may, I think, be drawn from a consideration of the various theories discussed in the body of the book will be found in the last chapter. These conclusions represent approximately my own views.

Method to be Followed.—It will be desirable to say a few words with regard to the method of our enquiry, and the nature of the territory into which it will lead us.

The study of life in all its forms as opposed to non-living matter is called biology ; the study of mind as opposed to body is called psychology. If our researches into biology convince us that everything that happens can be explained without postulating the existence of mind, if, moreover, we are unable to discern in the universe evidence for the existence of anything other than matter, and if we succeed in resolving all the facts of life and nature into different forms of material combination, then it is reasonable to expect that the mind which psychology studies will also be found to be ultimately reducible to a set of complicated material processes.

This expectation was, in fact, very widely entertained both in biology and psychology during the latter part of the last century. Before, therefore, we can proceed to consider theories about the nature of

mind, it will be necessary first to show that there is such a thing as mind about which to theorise, and, in order to do this, it will be necessary to refute the view just referred to. The statement of this view and of its refutation will, therefore, occupy us in Chapters I. and II., and throughout these chapters our enquiries will be largely confined to the realms of biology and of psychology.

Two other sciences will, however, also fall within our purview, namely, physics and physiology.

The science which considers the ultimate nature of matter in all its forms is called physics, and the science which investigates the properties of the matter which forms the human body is called physiology, and it is inevitable that the course of our enquiry should proceed for some part of the way through the territories of these sciences.

Philosophy and Science.—Our general method will, however, be different from that pursued by workers in any of these scientific fields, and will partake rather of the nature of philosophy. We shall, that is to say, be concerned to explain and interpret rather than to describe.

Accepting the results arrived at by the four special sciences mentioned above as valid, each within its own sphere, we shall proceed to consider what significance they have for the special problems we are to examine. We shall not, in short, stop to enquire how the sciences reach their conclusions, or

even whether they are true conclusions. We shall ask, rather, what, assuming them to be true, is their meaning for us ?

The point is important, since the mind-matter problem assumes a different aspect for each of the four sciences chiefly involved, and is differently regarded by each. The inference is that the psychologist, like the physiologist, and the biologist like the physicist, each approaching the problem in the light of the knowledge appropriate to his own special sphere, obtains only a partial view of the issues involved. Since, therefore, it is our object to survey the field not from any special point of view but from all possible standpoints, we must assume an acquaintance with all four sciences and pool their results. In so doing we shall be pursuing the methods of philosophy.

Science tell us how things, animate and inanimate, behave, and describes their behaviour in the simplest possible way. These descriptions are what are called scientific laws, or laws of Nature ; they are shorthand accounts of the behaviour of vast numbers of phenomena [1] which have been observed in the past, and they purport also to describe the behaviour of similar phenomena, which have not yet been observed. The law of gravitation does not say merely, " All apples which have hitherto been observed fall to the ground on leaving the tree," but it says, " *All apples*, both those which have been

[1] Phenomena =things which appear, *i.e.*, observed occurrences of all kinds.

observed and those which have not, fall to the ground on leaving the tree."

It is the object of science to reduce the descriptive formulæ, which constitute its so-called laws, to ever simpler and simpler terms, and to embrace within their scope an ever larger number of phenomena. But its function remains all the time a purely descriptive one. The scientist is content to ask what the fact is ; he does not ask why it is, what it is, or, in other words, what it means.

Now many people are not content with knowing what the facts are, they want to know what they mean. They also want to know what is the connection between the different groups of facts which the different sciences have collected. Thus, on the one hand, we have a mass of data collected by biologists ; they tell us all about the different forms of life and the way in which they behave ; on the other, an array of facts observed by psychologists ; they have studied the human mind and can tell us, or think they can, all manner of things with regard to the way in which it behaves. Each science has obtained a set of results in its own sphere, by methods appropriate to that sphere ; but it has done so without paying any heed to the others.

The question arises, therefore, are these results valid outside the sphere in which they have been reached ? What is their connection with other results arrived at by different methods, yet dealing with closely related subjects ? What, above all, do these results imply with regard to such important

questions as the nature and purpose, if any, of the universe in which we live, the status and prevalence of mind in that universe, the power of the mental to direct and mould the material, and the nature of the ideal good at which human beings should aim? These are the questions which philosophy seeks to answer, and though in the last result it fails, and maybe must necessarily fail in its quest, yet the mere process of searching for an answer satisfies a permanent and deep-seated need which science leaves unsatisfied. For most of us to know what happens is not enough; we want to know why it happens, and shall continue to press our questions even if we know they will never be answered.

It is by the methods of philosophy that we shall, in the main, proceed in this book. Refusing to enquire into the validity of the facts which scientists have collected, we shall take them at their face value and concern ourselves with the theories which seek to explain them. Confining ourselves to no special territory, we shall take a bird's eye view of several. We shall flit from science to science, take what the sciences have to offer, gather together what seem to us the more interesting and significant of their results, draw our own conclusions, and then speculate upon their meaning.

Definition of Terms.—A word may be added on the definition of terms. It is proposed to consider the nature of mind and matter and the relationship between them. Yet what, after all, do we mean

by these words? And can we use them intelligibly without first knowing what we do mean by them?

The difficulty here is one which besets all attempts to define ultimate terms. We cannot define mind and matter, because the meaning we give to these words in our definition would beg the very questions we are seeking to answer. Since, then, it is in part the object of this book to try to discover what mind and matter are, it will be better to refrain from assigning any explicit meaning to our terms until we reach the end of it. All definition is a process of question begging, but, if we must beg the questions we propose to discuss, it is better to do so at the end of our enquiry, when we have given our reasons for begging them in the particular sense in which we do beg them and in no other, rather than at the beginning.

For the present it will be enough to say that by matter we mean a certain combination of atoms and electrons. This combination is to be conceived of in terms of whatever formula is most fashionable in physics at the moment. The most popular contemporary formula for the atom is a nucleus of positive electricity, called a proton, surrounded by a varying number of revolving electrons of negative electricity, the nature of the atom, whether for example, the atom is an atom of helium or of hydrogen, being determined by the number of negative electrons and the quantity of positive electricity in the nucleus. By mind we mean the stream of

sensations, images, thoughts and volitions which together make up the thing, whatever it is, that is known by the name of consciousness. This consciousness we are commonly supposed to experience in ourselves ; most people also believe that they can infer its existence in their fellows from an observation of their behaviour.

CHAPTER I

MATERIALISM AND THE MECHANIST UNIVERSE

Introductory.—It is not possible to discuss the nature of mind until we have established its existence. This is by no means to be taken for granted. Until quite recent years the prevalent view among scientists was that whatever existed in the universe obeyed the laws that were known to operate in the world of matter. Since things could only obey these laws if they were fundamentally of the same nature as matter, it followed that they were fundamentally of that nature. Mind was, therefore, a form of matter.

This view, usually known as Materialism or as Mechanism, will be described in the present chapter.

During the nineteenth century all the sciences appeared to lend it their support. While receiving, however, a contemporary backing from physics, astronomy, geology and philosophy, it derived its chief strength from nineteenth century discoveries in biology and psychology. We will consider these in turn.

Classical Theories of Evolution.—While the facts of evolution are undoubted, various theories have

been advanced to account for their occurrence. The earliest forms of life were simple and homogeneous ; to-day living creatures are infinitely diverse and highly complicated. Yet these later complex forms must have evolved out of the earlier simple ones. To put the point crudely, a process which begins with the amœba and ends with man is only rendered possible by the occurrence of changes and variations in the offspring of the amœba. In order that evolution may be possible, species must not reproduce themselves identically ; small variations must occur [1] between parents and offspring ; these must develop into more marked variations in the next generation, and so on until out of the original species an entirely new species is evolved.

That something of this kind happens in evolution is generally agreed ; the question in dispute is, " What causes the initial variations to occur ? "

To this question there were two recognised answers in the nineteenth century, that of Darwin and that of the followers of Lamarck.

Darwin's answer was that the occurrence of a new species was a circumstance for which we could assign no reason. We just did not know what caused it, so that, for all we knew to the contrary, it might be a pure fluke. Short of any evidence to the contrary, it was safest, therefore, to assume that variations in existing species occurred by chance. Some of these variations would be adapted to their environment,

[1] Though see p. 158 (footnote) for the view that the variations are sudden and marked.

others would not. Creatures exhibiting those variations which were adapted would prosper and flourish, and transmit to their offspring the particular variation to which their prosperity was due. Creatures which varied in a manner unsuited to their environment would die out.

It follows that those variations survive and establish themselves which are most suited to their environment. Hence the famous phrase, "The survival of the fittest."

Lamarck's view was that the environment was itself the factor which conditioned the variation. If the environment changed, creatures living in it must either adapt themselves to the change or die out. Those which are successful in achieving this adaptation survive and produce offspring which are similarly successful. Thus if the Sahara desert, instead of being the dryest, was suddenly transformed into the rainiest portion of the earth's surface, we should, on Lamarck's view, expect camels to begin to grow the rudiments of umbrellas, and we should further expect those camels which failed to achieve this necessary modification to die out. Thus change in environment produces variations in species.

A classical illustration which exhibits the difference between the two theories is afforded by the answer to the question, "Why did the giraffe grow a long neck?"

Giraffes feed upon the leaves of trees. Those giraffes would clearly have an advantage in the struggle for existence whose height enabled them to

reach higher leaves than their fellows. We may even suppose, to put the point figuratively, that after a time all the lower leaves worth eating were consumed and that only those at the top of the trees were left; at any rate the more succulent leaves would be found at the top. In these circumstances what does the giraffe do? He grows a long neck, thus enabling himself to reach the highest leaves. How?

Because, said the followers of Darwin, a long-necked giraffe once happened by chance, and having, in virtue of his long neck, a great advantage over the other giraffes, flourished exceedingly, chose a long-necked mate and produced long-necked offspring rendered exceptionally lusty by their parents' well-nourished condition. Because, said the followers of Lamarck, the needs of an environment in which the best leaves were to be found at an ever greater height produced their inevitable influence upon the giraffes, and compelled them to adapt themselves to the new conditions by growing long necks or else to starve. Those which starved did not reproduce themselves; those which survived produced offspring, which had the long-necked characteristics of their parents, in virtue of which they also survived. Thus the giraffe grew his long neck.

In spite, however, of these differences, our two theories have one very important point in common. In accounting for variations in species they both rely on purely material factors. They hold, that is to say, that changes in individuals, variations in species, and, indeed, the whole course of the process which,

beginning with the amœba and ending with man, is known as evolution, are due not to the workings of intelligence, nor to the purpose and design of God, nor to the influence of some all-pervasive vital force which moulds and directs matter in pursuance of its own ends, but to the operation of purely external and material agencies which Darwin identified with chance and Lamarck with the influence of material environment.

These agencies acting on living organisms cause them to change in various ways ; but the changes never spring spontaneously from within ; they are imposed from without. Everything, in short, proceeds according to the law of cause and effect. In order to account for changes in living organisms it is not necessary to postulate the intervention of a mind or will, whether operating within the organism or directing it from outside, but simply to specify the material cause which, when brought into contact with the organism, caused it inevitably to change in the way in which it did.

The universe, in short, is conceived of as if it were the works of a gigantic clock. Somebody or something at some time or other wound the clock up. How this winding up process came to pass, of course, nobody knew ; certainly not the mechanists, since the initial winding up of the clock, if it really *was* the first operation in the whole evolutionary process, could not itself have had a cause. If it had a cause it would not have been the first cause ; yet a first cause, which is not itself the effect

of some preceding cause, contradicts the whole conception of the law of cause and effect. The winding up of the clock, then, was a mystery which the mechanists did not explain ; but, then, nobody else explained it either. Even if a God were introduced to set the whole process going, the mechanists wanted to know whence came the God. Granted, however, the initial mystery of the beginning of the universe, the mechanists could and did explain everything that happened thereafter with great simplicity and a rigid economy of assumption. A clock once wound up, proceeds automatically by the mere interaction of its parts ; and the universe does the same. One day, of course, the clock runs down ; and one day, presumably when the sun becomes too cold to maintain life any longer upon the earth, the universe, or at least all that is alive within it, will run down too. Meanwhile life and mind are offshoots of matter, determined and conditioned at every turn by material forces, and subject to the law of cause and effect which rules the world of physics.

But is this really a complete account of the matter ? Granted that we can explain evolution without the aid of mind, what about the mind by the aid of which we so explain it ? What about our thoughts, our consciousness, our very doubts as to whether mind exists ? Are these also material, not differing in their fundamental character from stones and sea water ? Clearly such an assertion involves a big step in advance of any we have hitherto taken. It was, however, a step for which the nineteenth cen-

tury was, on the whole, fully prepared, and it summoned psychology to assist in taking it. Psychologists were ready enough to answer the call and came forward with the parallelist psychology.

The Parallelist Psychology.—One of the earliest theories as to the nature of the relationship between mind and body was that of the philosopher Descartes. It was called Interactionism, and was extremely simple. For Descartes mind and body were two substances entirely disparate in character, the one distinguished by the characteristic of thought, the other by that of " extension " or occupancy of space. In the individual, and in the individual alone, these two substances interacted, and that was all that could be said.

The theory is, however, open to certain obvious objections. How, it may be asked, is it possible for two substances so entirely different as mind and matter are supposed to be ever to come into contact, much less habitually to interact with each other ?

The qualities of matter are mass, density and occupancy of space ; matter possesses texture, size, shape, colour and temperature ; it is known to the senses and can be seen, touched, heard, tasted or smelt. One piece of matter can and does affect another, and it does so in virtue of the attributes and qualities, some of which we have enumerated.

But mind possesses none of these attributes. It has neither mass nor density ; it does not occupy space ; it is not cognisable by the senses, and it is

only known through our own direct experience of it in thinking. How then can it affect or be affected by matter ; how can mind and matter so envisaged come to grips with each other ? How, indeed, can they come *at* each other at all ? Physical interaction between pieces of matter we know, and that thought can influence thought we know. But if matter is to influence thought or thought matter, it must be either by way of the kind of interaction we see happening in the physical world, or by way of the mental activity we know to occur in our consciousness. Either method seems impracticable. Force, mass and inertia do not touch thought ; thought does not exert force nor does it yield to mass.

The problem presented is that of the whale and the elephant raised to the *n*th degree of difficulty.

Finding himself unable to solve these difficulties, Descartes, like so many others, had recourse to the conception of the Deity to solve them for him. Every single action of the individual, involving, as it did, interaction between mind and body, was for him a miracle of divine intervention. Descartes could not conceive how interaction between mind and body could occur, yet occur it certainly did. But if an impossibility was not only a possibility but a certainty of everyday occurrence, it could only be so because God made it so. Therefore God did make it so.

Descartes' followers dropped divine intervention without introducing anything to take its place, with

the result that, by the middle of the nineteenth century, the theory, under the name of Parallelism, had assumed the following form. Mind and body are two distinct existences, obeying their own laws and performing their several functions. Since interaction between them is impossible, their respective courses must be supposed to proceed upon parallel but independent lines which never intersect. Nevertheless there is some underlying connection between them in virtue of which every material event has its corresponding mental event, and *vice versa*. No relationship of cause and effect, it will be observed, is alleged but only an underlying connection. But the underlying connection begged the question. How was it to be envisaged ? If material, it could not come at the mind ; if mental, it could not come at the body. It was, in short, better to postulate no underlying connection but to assume that by a series of coincidences indefinitely and miraculously repeated, each mental event was accompanied by an equivalent bodily occurrence, and *vice versa*. And this was, in fact, what the theory amounted to !

But the series of indefinite flukes was an outrage upon common sense which could not be tolerated, and in course of time the relationship gradually became more and more one-sided.

Mind as a Reflector of the Brain.—As the study of physiology developed many physiologists came to regard the mind as a very highly rarified form of matter. If you open a man's head and look to see

what is inside, you will find a collection of nerve cells and fibres constituting the greyish white matter, which can be seen and touched, which is in every respect indubitably matter, and which is called the brain. Now, without actually asserting that the mind *was* or *was identical with* the brain, nineteenth century physiologists came more and more to think of it as a rarified material essence surrounding the brain like the halo round the head of the saint, or the faint phosphorescence sometimes thrown off by decaying bodies. The function of the halo was that of a mirror or reflector ; it reflected events occurring in the brain, and in reflecting them it engendered a consciousness of their occurrence, or rather it itself became conscious of their occurrence.

Consciousness, therefore, was a sort of flickering material accompaniment of the brain, lighting up the brain with an intermittent glow, but dependent upon the brain for its existence and restricted to the function of registering cerebral events. The last point is highly important. If the function of consciousness is to light up the brain, it is clear that it cannot light up what is not there. Everything, therefore, that happens in consciousness first happens in the brain, and since nothing can happen in the brain that has not first happened in the body, the brain being merely a register of bodily occurrences, it follows that nothing can happen in the mind which is not the result of some preceding happening in the body.

We are all familiar with that explanation of mental states which attributes their occurrence to

bodily states. We say, "I had a nightmare last night in the course of which I saw blue devils, because I failed to digest my steak and kidney pudding"; or "you have a bad temper, are irritable and think everybody hates you, because you have been out in a biting east wind"; and it was just this type of explanation, enormously expanded and worked out in infinite detail, that was now invoked to explain all mental phenomena.

To put it shortly, we may say that every mental state reflects and is conditioned by a preceding bodily state. In other words, the relation of cause and effect *does* hold between mind and body, but it holds always from body to mind, never from mind to body, and it does this because, in the last resort, the mind is only a part of the body, material like the body and subject to the physiological laws which govern the body.

The Mechanist Universe.—Putting together the conclusions of nineteenth century biology and of the parallelist psychology in its later developments, what is the picture of the universe which emerges? It is that of a mind determined by the body, and of a body determined by its external environment. Changes in the body are due either to chance or to changes in external environment to which the body reacts, and all changes in mind are due to changes in the body. In other words, causation proceeds always from the material to the mental; from the less living to the more living. Beginning with a change in the external material world, it ends in conscious

event which we call a thought or a feeling. This thought or feeling we believe to be spontaneous, but it is in reality the last link in the chain of causation, which begins with an occurrence in the external world.

In such a world life is a comparatively rare and insignificant phenomenon. By some accident matter has managed to become conscious of itself, but this accident is of no significance, and it is merely human conceit which regards the consciousness resulting from the accident as the key to the interpretation of the universe as a whole. Life, in fact, is a mere eddy in the primæval slime, a chance phenomenon evolved under favourable conditions by material forces and doomed to perish when those conditions cease.

Geology and Astronomy.—This general view of the supreme unimportance of life was strongly reinforced by contemporary astronomy and geology. Geology had enormously extended the age of the earth ; astronomy had extended the boundaries of space. Nowhere, except upon this earth, and during a brief period of its history was life known to exist. Thus in the vast immensities of geologic time and astronomic space life seemed like a little glow, flickering for a brief period and doomed to ultimate extinction. In any event life, or mind, was not a sign-post pointing to the fundamental and underlying character of the universe. Rather it was like a passenger travelling through an environment that was fundamentally alien and brutal, a passenger

who would one day finish his pointless journey with as little noise and significance as, in the person of the amœba, he began it.

Meanwhile life, mind, spirit and consciousness were all forms of the material universe, springing from it and determined by it. Nothing could happen in the world of mind which had not previously happened in the world of matter, and nothing could happen in the world of matter which was not determined by some preceding happening. Thus the past completely determined the future, and in order to predict the future all that was necessary was a sufficient extension of our knowledge of the past. History, physics and physiology could, in fact, give us a complete account of all that happened or would happen in the universe, if only we knew enough about them. The chain of material causation was complete ; it was required merely to examine a sufficient number of links and they would tell us all that could be told, both of the beginning and of the end.

Hence Professor Tyndall, in his Presidential Address to the British Association, was able to envisage the future of science as one which would enable us to survey the "Ultimately purely natural and inevitable march of evolution from the atoms of the primæval nebula, to the proceedings of the British Association for the Advancement of Science."

CHAPTER II

THE BREAK-UP OF THE MECHANIST UNIVERSE

Introductory.—The mechanist conception of the universe has, in the main, been abandoned. Scientists still exist who take a materialistic view of the phenomena of evolution, but they are in a minority, and few embrace the mechanist hypothesis with the uncompromising rigour of the nineteenth century. There is, indeed, to-day a new kind of determinism countenanced by certain modern theories of psychology, which we shall endeavour to describe in a later chapter,[1] but it is embraced for reasons very different from those which influenced Huxley, Tyndall, Haeckel and other prominent scientists and philosophers of the last century. With this exception, the predominant temper among biologists and psychologists to-day is vitalistic rather than materialistic, in the sense that modern thinkers prefer to think of causation as proceeding from the more living to the less living, rather than from the more dead to the less dead.

The reasons for this change of attitude are not easy to summarise in a single chapter, nor are they by any means conclusive. The evidence which has been

[1] See Chapter IV.

accumulated in no instance rises to the level of demonstrable proof, but, coming as it does from a number of different sources, it has initiated a general tendency or drift towards a vital or spiritual rather than a mechanistic interpretation of phenomena. To put the point metaphorically, we may say that the central mechanist position has been turned by a series of flank attacks rather than stormed by a victorious frontal advance.

What, in short, has happened is that in a number of different spheres the drift of thought has, under the influence of a mass of diverse considerations, been away from a mechanistic and towards a vitalistic interpretation of events. All that we can do is to enumerate some of the most important of these considerations in the three departments which most directly concern us, namely, biology, physics and psychology.

I. Biological Considerations

There is an increasing tendency on the part of biologists to explain the behaviour of living organisms in terms of purpose. In so far as they are determined, they are determined not from behind but from in front; their actions are to be explained, that is to say, not in terms of the influence of external forces such as environment or heredity operating from the past, but in terms of the ends they desire to realise and the purposes they wish to fulfil, which exert, as it were, a pull from the future. I do not wish to imply that either form of explanation is definitely estab-

lished to the exclusion of the other ; it is only that there is a greater disposition to adopt the purposive rather than the mechanistic. Thus the salmon proceeding up stream, leaping obstacles and breasting the current in order to deposit her spawn in a particular place, is acting in a way which it is as difficult to explain in terms of adaptation to environment, as it is easy to attribute to the unconscious desire to fulfil a purpose.

But the recognition of an end to be achieved, even if it is desired unconsciously, implies the existence of some kind of intelligence operating within the organism and directing its activities in pursuance of the end.

Not only can it direct the actions of the organism, it can also mould its structure. Thus the crab who has lost one of its legs by mischance immediately begins to grow another to make good the deficiency. How is such a phenomenon to be interpreted ? There has been no change in the creature's environment, in terms of adaptation to which the growth can be explained. Yet the creature does in fact alter. Or take the hydroid plant *Antennularia* and remove it from the flat surface to which it is accustomed to adhere. It will immediately begin to change its structure, proliferating long waving roots or fibres in the vain effort to find something to grip. So, too, with the hyacinth bulbs which women place in jars. In each of these three cases we have a change in form, which appears to indicate a definite attempt on the part of the organism to adapt itself, if neces-

sary by altering its structure, to an abnormal environment. Now how are we to explain such transformations ? Are they, in fact, of the same type as the movements of a machine, and can they, therefore, be interpreted on mechanistic lines ? It is always possible to maintain that they are *in all respects* susceptible to this kind of interpretation, and it must be admitted that in *some* respects, *e.g.*, in respect of such activities as those of circulating the blood and growing the nails and the hair, living organisms do behave in an obviously mechanical way.

But in two respects at least we are able to observe important differences.

(1) *Characteristics of the behaviour of Living Creatures.*—The behaviour of a machine is to be interpreted in terms of an automatic response to stimulus. Wind the spring and the watch goes ; turn the handle and the engine starts. Provided the stimulus be suitable the machine cannot help responding to it.

In the instances given above the actions of living organisms appear to be radically different. Instead of being interpretable merely as a series of automatic responses to stimuli, their behaviour involves three separate and distinguishable stages :—

(*a*) There is a perception of an external situation. The salmon sees the rocks over which it must leap. This perception may lead merely to a number of external movements, as in the case of the salmon, or

to an alteration in structure of a permanent kind, as in the case of the *Antennularia*.

(*b*) There is what is called a conation, that is to say, a strong impulse of the same instinctive type as those which prompt us to maintain and reproduce the species by eating and making love. Of such impulses and of the activities that spring from them, we can give absolutely no account whatsoever, except to say that they appear to be independent of any change in external environment. The important point is that the extent of a creature's activity or response will depend not only upon the amount of stimulus applied, but also upon the intensity of his conative impulse. The conative impulse is, in short, an additional and intermediate factor between stimulus and response, which the machine does not possess.

(*c*) There is purposive activity directed to a definite end, and continuing after the stimulus has ceased to be applied. A machine stops when it has run down. The salmon continues to leap in its endeavour to overcome the rocks until it succeeds.

(2) *The Organism as a Unity*.—In the second place a living organism is a unity in a sense in which a machine is not. A machine is the sum total of its parts, the aggregate of all the cranks and nuts and screws which it may be found to contain. You can take a machine to pieces, examine each of its component parts separately, and put them together

again. Or, if you like, you can arrange them differently so that they form another machine.

A living body is not susceptible of this treatment. The days are long past when a man was able to regard his body as "a system of pipes and tubes," in Addison's phrase, reacting like any other pipes and tubes to what was put into and taken out of them. A body is admittedly a collection of pipes and tubes, but it is also something more than that. It is, in other words, a whole or unity, the distinction between a whole and an aggregate being that, whereas an aggregate is merely the sum of its parts, a whole is more than the sum of its parts. It is something over and above them, brought into being by their coming together, but not therefore to be resolved into them. Thus one organ in the body is not an isolated, separable entity existing in its own right; it is a component part of a whole, and is bound together by necessary relations both with the whole and with all the other organs which compose the whole. Divested of these relations, taken, that is to say, as an isolated entity divorced from the rest of the body, the organ would not be the organ that it is; it would be quite literally something different. Hence, when we say that the body is a whole or unity, one of the things we mean is that its parts owe their nature to the fact of their being parts of the whole, that they are bound by necessary relations to the other parts, and that they form with these other parts and with the relations a new entity, namely, the whole body, which can only be broken up at the cost of the destruc-

tion of the parts as parts. You cannot, in short, take a living creature to pieces and put him together again as you can do with a machine, nor can you rearrange his parts so as to make a different creature; and you cannot do these things for the simple reason that by taking him to pieces you would not merely disperse an aggregate but would destroy a whole.

From this conception of a living creature as a whole or unity it follows that it can act as a whole in a sense in which a machine cannot. Hence you can ask about it such questions as, "What is it seeking to achieve?" "What is it that it wants?" which are inappropriate as applied to a machine, and you can ask them just because a living thing is an *it*, because, that is to say, it is a *something* in its own right over and above the various elements which can be discerned in its make-up.

Hence modern biology tends more and more to regard a living creature as different in kind from a machine, its difference being due to its possession of a mysterious something called life, which cannot be explained as merely a certain conformation of matter, and which confers upon that which possesses it the quality of wholeness or unity.

Why did not Evolution stop?—And if we do not accept this view, how are we in any event to explain the continuance of the process called evolution? If evolution is to be interpreted solely in terms of adaptation to environment, such adaptation, or at least a greater measure of it than exists among men, was

achieved long ago among beings whom we are accustomed to regard as inferior. The monkey, for example, suffers from fewer diseases, the elephant is longer lived than man. The tiger has succeeded in evolving a covering which renders him immune from the vagaries of the climate, and kills only as many of his fellow-creatures as he requires for his sustenance. Man, on the contrary, is unable to exist unless he is protected from his environment by coverings taken from other animals, and, so far from killing only those creatures which he requires to eat, he does not scruple to denounce cannibalism as wicked at the very moment when he is destroying great masses of his fellow-creatures for sport, for patriotism, or in the interests of justice and morality.

Man, considered from the purely physical point of view, is thus ridiculously unfitted to his environment, besides being immeasurably the most destructive of all the creatures in that environment. Why then, if the motive force and driving power behind evolution is the need to secure adaptation to environment, did not evolution stop at the elephant and the monkey? Why did it go on to produce man? Is it possible to resist the conclusion that evolution is the expression of some force which, not content with achieving relative safety for its creatures by means of adaptation to environment, proceeds to complicate itself ever more and more dangerously in the endeavour to evolve *higher* forms of life? But if this be the case, then we are driven once more to make provision in our universe for something besides matter.

II. Considerations arising from Physics

Elusiveness of Modern Matter.—Modern developments in physics have rendered the traditional materialistic explanation of the universe increasingly unsatisfactory. For the nineteenth century scientist matter was a clear, definite, tangible something, occupying a position out there in space and subject to certain unalterable laws. Examples of these laws were, the law of cause and effect, the law of gravitation, the law of the conservation of energy, and so forth. But the matter of modern electrical and relativity theory bears no resemblance to the homely entity in which the Victorians believed. It is more vague, more intangible, and its behaviour is subject to laws which are much less certainly known. Matter in fact has become just as mysterious as mind and is distinctly less familiar. The modern tendency to work in terms of mind rather than of matter is, therefore, from one point of view, simply the expression of a natural preference for working in terms of the more known rather than of the less known.

A serious incursion into modern physics demands considerable technical equipment, and it is not proposed to attempt it here. At the same time it will be possible to touch upon some of the most important theories current to-day, and to show their bearing upon the mechanist conception of the universe, without postulating a greater knowledge of physics and mathematics than is possessed by persons of ordinary education.

(*a*) *Ultimate Constituents of Matter.*—I will endeavour, in the first place, to summarise what modern physics has to tell us of the ultimate constituents of matter.

These are not, as was commonly supposed in the nineteenth century, atoms moving in ether. Atoms can be further analysed into nuclei of positive electricity surrounded by negative electrons varying in number according to the amount of the charge of positive electricity in the nucleus. It is probable that the nuclei of all atoms are built up out of hydrogen nuclei and electrons. Hydrogen nuclei and negative electrons would appear, therefore, so far as we know at present, to be the ultimate constituents of matter.

Two points are important in connection with our present enquiry. The first is that the atom is by no means a stable and immutable entity. In certain circumstances a negative electron may leave the atom to which it belongs, and, ceasing to revolve round the central nucleus, fly off at a tangent and either join another atomic system or wander through space as a free electron. When this happens the atom which has lost the electron becomes positively electrified and its nature is changed.

The second significant fact to which attention might be drawn is that although electrons revolve around their nuclei in orbits which are situated at varying distances from the nuclei, and, although the normal distance from the nucleus of the nearest electron is about half a hundred-millionth of a centimetre (a centimetre is slightly more than a third of

an inch), nevertheless the atom is almost entirely composed of empty space. This is because the nuclei and the electrons are themselves so infinitely small that the distance between the orbit and the nucleus is comparatively very large indeed, bearing much the same relation to the size of the nuclei and the electrons as the distance between the earth and the sun does to those bodies. An atom is, therefore, in the main, composed of empty space, the empty regions it contains being much larger than the particles of matter. For this reason a sufficiently small body can pass through the atom without hitting any of the matter of which it is composed. This is what happens when particles are thrown off in radio activity ; they pass through the atom as easily as a comet does through the solar system.

Thus modern physics throws doubt upon the apparent solidity and changelessness of matter, revealing as the ultimate constituents which survive analysis entities which, besides being liable to sudden cataclysms which completely alter their nature, are composed in the main not of matter at all, but of empty space. A unit of matter is, in fact, little more than an electro-magnetic field which, while theoretically extending over the whole of space, has its greatest activity in a certain region. This is a very different conception from the solid, tangible entity of the Victorians.

(*b*) *Influence of Relativity Theory.*—Let us now consider the bearing of some of the results of modern

relativity theory upon the conception of matter. The most important of these results is the introduction of time as one of the constituents of a material object.

Euclidean space is, as every one knows, three-dimensional in character; that is to say, objects occupying positions in Euclidean space have length width and height or depth. Thus, in order to obtain the distance between any two points in Euclidean space, what we have to do is to obtain their co-ordinates; the distance is then ascertained by applying to the co-ordinates a formula based upon a theorem of Pythagoras. This formula, where X, Y and Z are the co-ordinates of the one point, and x, y and z of the other, is as follows: D, or the distance between the two points, equals $\sqrt{(X-x)^2+(Y-y)^2+(Z-z)^2}$. This distance is constant and is the same for all observers.

Modern relativity theory has shown, however, that space is not Euclidean in character, or rather that Euclidean space is only one among an infinite number of different spaces, all of which taken together constitute real space. This real space is indissolubly bound up with time, so that it is not possible to make a true statement about space alone or about time alone, but only about space-time. In order, therefore, to ascertain the distance between two points, or rather between two point-events (as modern mathematicians call them), in real space, that is to say, in space-time, we shall have to introduce a fourth co-ordinate, namely, the co-ordinate of the point-event in relation to what is called the

time axis. If this co-ordinate is T for one point and t for the other, our formula now becomes: S, that is to say, the distance in space-time separating two point-events, equals

$$\sqrt{(X - x)^2 + (Y - y)^2 + (Z - z)^2 - (CT - Ct)^2},$$

where C is the velocity of light.

Several important results follow. One is that the four-dimensional continuum which is space-time is slightly curved. Another is that no one point in space is ever the same point for two moments together, since in the second moment it occupies a different position in time and is, therefore, a different point. It is for this reason that modern mathematicians do not speak of points, but of point-instants or point-events, in order to demonstrate the fact that its place in time is an integral characteristic of a point, and must be taken into account in determining its nature.

Since the nature of objects is determined entirely by their space-time co-ordinates, that is, by their positions both in space and in time, it follows that an object, since it occupies at every moment a different position in time, is at every moment a different object. An object is not, therefore, a single permanent entity, but a series of fleeting temporary entities. Each number of the series endures for a moment only, but it is so like the other numbers which precede and succeed it as to be indistinguishable from them.

(c) *An Object as a Series of Momentary Objects.*—It follows that a physical thing, instead of being persistent in time, is continually coming into and going

out of existence. The point may be illustrated by a reference to the cinematograph. When in a picture palace we see a man running away from the police, we know that what we are in fact observing is not one man running, but a series of momentary photographs of men, each member of the series being a different photograph, of which the appearance on the screen is visible only for a very small instant of time. Except when we reason about the matter, however, we are persuaded that we are really beholding the movements of one continuous man, the illusion of continuity arising from the rapidity with which the momentary men succeed one another.

In precisely the same way the modern physicist thinks of a real man as a series of cinematographic men, collected together in virtue of the likeness of every member of the series to every other member, and also in virtue of the rapidity of their succession. All physical objects are series of mathematical entities of this kind. This conception, which appears to be novel and striking with regard to time, is familiar enough in the parallel case of space. We all of us believe that our bodies are made up of large numbers of atoms and corpuscles, each of which occupies only a very small portion of space. Our body, from the point of view of physiology, is nothing but the collection of these atoms and corpuscles arranged in a certain order. In precisely the same way, any object which persists for a certain time is made up of a number of momentary objects persisting, each of them, for a very short time ; these other

objects, again, are made up of yet more ephemeral objects, so that the ultimate constituents of matter consist of series of momentary objects persisting each for a very short interval of time, just as they also consist of series of tiny particles occupying each a very small portion of space. A series of momentary objects, usually known as "particulars," is collected together in virtue of their likeness to each other and the continuity of their succession. The resultant collection is called a material thing. But this collection has no reality as such, any more than "humanity" has any existence apart from the different human beings who compose it, and who are collected together by an act of thought under the general heading of humanity.

In order to illustrate this conception, let us consider the part played by an instrument in an orchestra. This consists of a number of isolated notes which are collected together in a series and distinguished from the notes played by the other instruments, because of their resemblance to each other and of the fact that they proceed from the same instrument. But nobody would contend that the *rôle* of the flute was a really existent thing, in the sense of being something other than or additional to the series of notes which go to compose it. In the same way a man may be regarded as a series of momentary men. Apart from these momentary men he has no real existence, so that in attributing to him such continuous existence as we undoubtedly do in everyday life, we are performing an act of mental construction which endows

with apparent permanence and solidity what is, in fact, a series of fleeting, momentary particulars.

The world of matter is thus composed of momentary particulars subsisting each of them for a short time only, and a so-called material object is a logical construction or symbol standing for a series of particulars which are arranged together by our minds.

An important result follows. Since the appearance which a so-called piece of matter presents will vary with the place from which it is observed, each person will obtain a slightly different view of it. Now we are accustomed to the notion that each person sees a slightly different aspect of a thing, according to the position from which he observes it, but we hold, nevertheless, in everyday life that it is the same thing that each observer sees. If, however, our theory of the composite nature of a piece of matter as a series of momentary particulars is correct, we shall have to modify the ordinary view to the extent of saying that each person sees a slightly different thing. In other words, no two persons ever see precisely the same member of the series of particulars which constitute a piece of matter. This result follows because no member of the series seen by one person ever occupies precisely the same place as the member seen by another person, and between any two points of observation, however near we may suppose them to be, there will be an infinite number of intermediate points from which yet other members of the series will be seen.

Matter, then, is far from being the stable, permanent, tangible something in which nineteenth-century

science believed. Modern analysis shows, on the contrary—

(1) That a piece of matter is different at each successive moment of time ;

(2) That it is not, therefore, a stable object, but a series of momentary objects ;

(3) That these momentary objects are grouped together in virtue of their resemblance and of certain principles of continuity ;

(4) That a piece of matter is, therefore, a logical construction from the series of particulars ;

(5) That, as no two persons ever observe identical members of the series, no two persons ever observe the same piece of matter. Matter is, therefore, relative to the observer.

(*d*) *The Laws of Matter.*—To the workings of matter so conceived it is scarcely to be expected that the so-called unalterable laws of nineteenth-century physics will apply ; nor, in fact, do they. That the law of gravitation as Newton conceived it is no longer quite true is common knowledge, and Einstein's general Theory of Relativity has played a large part in making the world of physics at once more fluid and more mysterious. Instead of stable entities standing in fixed relationships to each other, we are now presented with a world in which the special standpoint of the observer plays its part in determining both the nature of each entity observed and the relationship in which it stands to other entities. As an illustration of the anarchy which has

invaded the realm of physical law, let us take a modern interpretation of the law of cause and effect.

Cause and Effect.—The law of cause and effect used to be regarded as an unalterable principle governing all the relationships subsisting in the world of matter. It was, moreover, the very keystone of the mechanist universe. If, for example, a phenomenon x occurred, it was thought that there must be a preceding phenomenon y which was the cause of x, and without which x could not have occurred. The whole of the mechanist conception of the universe described in the last chapter was, in fact, based upon the belief that each event had its own particular cause, which determined its occurrence and from which it inevitably sprang. Modern physics has altered our view of the cause and effect relationship in two ways :—

(*a*) In the first place, it can be shown that the direction in which the causal relationship holds is not a fact subsisting in the material world, but is dependent upon the position of the observer ; in other words, whether we think y to be the cause of x, or x to be the cause of y, depends entirely upon the point of view from which we observe them.

(*b*) In the second place, the notion that there is any *one* cause for the occurrence of an event has been abandoned.

(*a*) Taking the first point first, let us consider the case of a person observing the sequence of events upon the earth through a telescope placed upon a

comet moving away from the earth with a velocity [1] greater than that of light. If we assume that a person so circumstanced could observe the earth at all, it is clear that he would see so-called later events before he would see so-called earlier ones.

Let us, for example, suppose that an event y occurs at 11 a.m., and an event x at 11.5. If the comet is receding from the earth with a velocity equal to that of light, the observer who sees y will never see x at all, since the light which reaches him from the earth will always bring the report of the same events, while the light which brings the report of subsequent events will never be able to catch him up. If, however, the velocity of the comet is slightly increased, it will begin gradually to catch up with the light which brings the messages reporting the earlier events, so that he will see them after he has seen the later ones. Thus he will see y after he sees x, and will regard x as the cause of y, just as we regard y as the cause of x. To such an observer the history of a man's life will appear first as a disturbance among worms, then as the clothing with flesh of bones in a coffin, then as the peevish senility of an aged person, and so backwards through middle age and youth, until it finishes with the embryo in the mother's womb. From such a standpoint, therefore, all the events which we call causes will appear as effects, and all the events we call effects as causes.

[1] In an Einsteinian universe the velocity of light is the greatest velocity possible, though a velocity equal to that of light is theoretically conceivable. The example given in the text is, therefore, purely hypothetical.

Hence it appears that the so-called sequence of events is not due to the operations of a law of cause and effect, but is dependent entirely upon the view point of the observer. Is there then a law of cause and effect, or is the so-called law merely, as Hume thought, a shorthand method of stating the fact that certain events of the type A have been known very frequently to follow certain other events of the type B, and that no instance of the occurrence of an event of the type B, which has not been followed by the event of the type A, has yet been observed? If Hume is right, there is no such thing as a law of cause and effect connecting events; there is nothing more than an observed sequence of events.

(*b*) The teaching of modern physics throws further doubt upon the law of cause and effect by suggesting the same conclusion. The notion that in the case of every phenomenon there exists some other phenomenon, which can in a special and peculiar sense be regarded as the cause of the first phenomenon, has come to be abandoned. Every event is born not of some one preceding event, but of a whole situation or complex of events, no one of which can be regarded as *the* cause of the event in question. The event, in short, has no cause.

The following example may serve to illustrate this conception. Let us suppose that as a result of getting wet feet a man catches a chill. His powers of resistance to harmful influences being weakened, he is attacked by the germ pneumococcus which infects his lungs, with the result that pneumonia sets

in. The disease spreads, the lungs are put out of action, the body is infected with toxins produced by the pneumococcus, collapse and heart failure ensue, and the man dies. Now in one sense we may say that the beginning or cause of the whole process, and hence of the death, lay in the fact that the man got his feet wet. But is this really so? It is clear in the first place that his wet feet might not have caused his death, unless he had failed to change his shoes and stockings; that his failure to change his shoes and stockings would not have been of importance unless it had caused him to catch a chill; and that the chill in its turn was only a relevant factor in so far as it lowered resistance to the activities of the pneumococcus, and hence paved the way for pneumonia. Even the pneumonia would not have been effective unless it produced a collapse, which, in its turn, caused the heart to stop beating. Now if we call the whole chain of events, from the getting of the feet wet to the cessation of the beating of the heart, the cause process, it is clear that, so long as the later events in the process occurred, so long that is to say, as there was a collapse and a cessation of the heart beat, the earlier events may be ruled out as irrelevant. In this way we can shorten the cause process indefinitely—even the collapse need not be regarded as a *necessarily* effective cause of death, since after the collapse had occurred it would still have been possible for the man to have been shot through the heart, in which case the shooting would have been the cause of the cessation of the heart

beat—until we are left with only the cessation of the heart beat as the actual cause of death. But even this is not the immediately effective cause, since, unless the cessation of the heart beat itself produced certain physiological results, death would not have ensued. Now let us consider death, or the effect process. Anything that happened after the first of the occurrences that may be regarded as constituting death may again be dismissed as irrelevant, so that we may rule out of our consideration everything except the very earliest event in the effect process.

We are left, therefore, with two events, namely, the last event in the cause process and the first event in the effect process, as the only events that need be taken into account.

Now with regard to these two events, one of two things will be true ; either they are, in fact, one and the same event, or, if they are not, it will be possible to insert between them an infinite number of other events, each of which must occur before the second of the two events can occur. Thus, however near together we place the event which is the so-called cause and the event which is the so-called effect, there will be still other events which must happen after the cause has happened and before the effect can happen. The cause can, in fact, only produce its effect in so far as it is effective, in so far, that is to say, as it has some consequence in virtue of which it is able to produce what is called the effect. Thus, instead of an isolated cause producing an isolated effect, analysis reveals a sequence of events each of which is linked to

the succeeding event by an infinite series of other events, no one of which can be called the cause or even part of the cause process, any more than any other can be called the effect or part of the effect process.

Thus the laws, if laws they can be called, which govern the operations of matter, are just as mysterious and complex as matter itself. The world of matter is, in fact, nothing but a collection of point-instants or events, of which the only thing which can with any certainty be predicted is sequence in space-time and arrangement in series. Of this world we are far too ignorant to be able to assert what it can or what it cannot do ; certainly we are not in a position to say that in the course of various arrangements and rearrangements of itself it can become the feelings, thoughts, volitions and desires of which our experience makes us aware, and which are the stuff of which consciousness is composed. It is, of course, possible that this may be the case, but if it is, we are not in a position to describe or even to imagine the process. We can, in fact, no longer to-day indicate the stages by which matter could have evolved into mind, as the mechanists believed themselves to have done in the nineteenth century. To work in terms of mind rather than of matter involves, therefore, an economy of mystery. This conclusion is reinforced by modern psychology.

III. Psychological Considerations

It is when we turn to the facts of consciousness that the inability of the mechanist hypothesis to

give a satisfactory account of psychological processes becomes most apparent. The subject-matter with which we have to deal in psychology is the very stuff of which our experience is made, stuff to which we give the names of feeling, thought, sensation, desire, or volition, according to the different complexions which it bears at different moments, but which comes to us in a continuous stream of never-failing experience, and which we know only in this form. In other words, we have no evidence for the existence of consciousness and our mental life, except that which is supplied by our experience of consciousness and our mental life, and we must now see how far the attempt to explain this experience in terms of purely physical processes working in obedience to physical laws is successful.

(*a*) *Difficulty of locating Mind in the Brain.*—At the outset of our enquiry we are met by a curious circumstance. If mind were, as the mechanists supposed, merely a flickering accompaniment of the brain, mind action being in all respects dependent upon and conditioned by brain action, it might be expected that physiologists would be able to locate certain types of intellectual activity in certain parts of the brain. Thus we should be able to point out those cells in the brain which are the seat of memory, of mathematical thinking, of anger, of desire, and so forth, while phrenology, instead of being a happy hunting ground for quacks and charlatans, would become an exact science. A man's capacity and

integrity could be ascertained by an inspection of his brain, and statesmen and rulers could be required to submit their cranial conformations to the examination of committees appointed by the electorate.

Yet nothing of the kind is possible. Theories which profess to locate mental functions in this or that portion of the brain have failed to win acceptance outside the ranks of those who have propounded them ; and psychologists who hold contrary views have been able again and again to produce cases which appear to prove that the mind can, at any rate for a time, continue to function, after the brain has ceased to operate. Men whose brains have been in a large measure destroyed by disease or accident or removed by operation are still able to indulge in complicated mental processes. The philosopher Bergson, for example, gives numerous instances of people whose capacity for receiving sensations has remained unimpaired, when precisely that portion of the brain which has been alleged to be the seat of sensation has been destroyed by a tumour.

(*b*) *The Case of Memory.*—The case of memory affords a good instance of the inability of the mechanist hypothesis to account for the facts of experience, and it will be well to examine it in a little more detail.

It is commonly supposed that every event, however trivial, which occurs in the life of the individual leaves a kind of mark or impression upon his mind. As a rule the impression is faint and rapidly fades.

Even when this is not the case it becomes overlaid by subsequent impressions and passes into the unconscious. It is, however, never completely destroyed. On the contrary, the unconscious acts as a kind of conservatory or storehouse, in which the impressions of all the events that have happened to the individual are locked up. When the conscious is in abeyance, as in sleep, day dream or reverie, the store-house door is opened and forgotten impressions make their escape and re-enter our minds.

So far as conscious memory is concerned, it is supposed that the occurrence of an event similar to, or associated with, a past event, of which the impression has passed into the unconscious, recalls the impression, causing the impression left by the past event again to rise up into consciousness. When this happens the event which originally made the impression is said to be remembered. What is therefore, on this view, before the mind in memory is a present impression or image of a past event, an image which has persisted in the unconscious ever since the event occurred, and of which we become conscious as the result of the occurrence of some present associated or similar event, or by a definite act of recall. Though this so-called memory image is a mental phenomenon, it is one for which, on the mechanist hypothesis, there will be a physiological cause and counterpart. Every such image is merely a reflection of a modification among the grey matter comprising our brain, and it is of this modification that we are aware when we say that we remember.

This analysis of memory is open to one very serious objection. Let us suppose that I remember St. Paul's Cathedral. The theory requires us to suppose that what I am directly aware of when I am performing this act of memory is a mental image of St. Paul's Cathedral, produced by the series of sensations and impressions which I experienced when I last saw it, and which have been dormant ever since. It does not say that I am directly aware of St. Paul's Cathedral itself, but only of a certain mental state or picture of my own, this mental state or picture being further described as a picture of St. Paul's Cathedral. But if I do not know St. Paul's directly, how can I know that the mental picture is a picture of St. Paul's and not of something else ? In order to know that X is an image or picture of Y it is necessary to know not only X but also Y. If Y is not known directly as well as X, then the fact that X is a picture of Y and not of some entirely different entity such as Z can never be established. If, in short, correspondence or likeness between the two entities is to be asserted, so that one may be said to be a representative or image of the other, both the entities must be known directly ; if they are not so known the correspondence can never be made out.

The point may be illustrated by considering the well-known experience of trying to remember a tune that has escaped us. Various tunes come into our heads only to be rejected on the ground that, although undoubtedly like the tune we are in search of, they are not that tune. But how can we be cer-

tain that they are not the tune we want unless we are in a sense aware of that tune all the time, so that, in virtue of our knowledge of it, we are able to convict the tunes that do occur of not being it ? And when finally the desired tune does return to us, we can only recognise it as being that which we wished to remember in virtue of an already existing knowledge of its characteristics. In other words, the correspondence, or rather identity, between the tune we now remember and that which we wished to remember can only be made out if we were all the time aware, in some sense, of the tune which we wished to remember even when we could not recall it.

It would seem, therefore, that, if I am to remember St. Paul's Cathedral, an image is not enough to account for the act of memory taking place. If an image is all that I am aware of, then I can never tell that it is an image of St. Paul's ; in other words, I can never know that it is St. Paul's I am remembering and not something else. As Plato said long ago, we can never obtain new knowledge. For either we know what we want to know, or we do not. If we know what we want to know, we already have the knowledge we desire ; if we do not know what we want to know, we cannot tell when we have got the knowledge we desire.

It follows that, in order that I may know that my image is an image of St. Paul's, I must also be directly aware of St. Paul's. Then, and only then, can I identify the image. But if we assume that I can in some way become directly aware of the past fact

which is remembered, that is, of St. Paul's, what is the use of the image which is merely a representation of St. Paul's ? Nobody would wish to attend to an image of a past fact if he could be aware of the past fact itself. In memory, therefore, it would seem that we are able to dispense with the intervention of images and to return to the fact we remember, re-experiencing it now by means of the mind as directly as we once experienced it by means of the senses. But the capacity of the mind to return to and to become directly aware of a fact that occurred in the past, and is not now present, is inexplicable on a materialist basis. If the existence of an image were enough for memory, then a materialist explanation would be admissible, since a mental image might be interpreted in physiological terms. But if, as we have tried to show, a mental image is not enough, we have no alternative but to credit mind in memory with powers for which no physiological counterpart can be found.

Our conclusion is that the mental seems in certain directions to overflow and to extend beyond the cerebral, so that, even if it be true that some, and even most, mental functions can, at least in part, be interpreted in terms of brain action, there always remains a residue which cannot be so interpreted.

Perception of our Bodies.—One of these functions consists in the perception of our bodies. We are all agreed that in the perception of external objects our bodies play an essential part. If we had

no sense organs, we should have no reason for believing in the existence of the external world. Our knowledge of this world comes to us by means of our senses, so that, even if we should be driven to admit that the act of perceiving is in itself a mental one, the *manner* of our perception involves the occurrence of bodily processes. But though we perceive *with* our bodies, we also perceive our bodies themselves, and we perceive our bodies because of a constant interaction between mind and body. In all perception two elements are involved; that which perceives, and that which is perceived. These elements can never be identified,[1] since the very fact that perception takes place implies a distinction between them. Even if we were to say that X perceived X, we should be introducing this distinction, the X as perceiving being literally different from the X as perceived.

It follows that, when we know our bodies, it cannot be with our bodies that we know them. In perception, therefore, it seems once again that mind is able in certain directions to overflow the brain and to indulge in activities which are not identical with those of the brain, even if they cannot take place without them. Thus, if I may be forgiven the use of a little strong philosophical language, the mind, though immanent in the body, is able to transcend it, and, in thus transcending it, plainly proclaims its refusal to be identified with it.

[1] For a further consideration of the problem of perception, see Chapter III.

(c) *Quantitative and Qualitative Changes.*—Let us assume for a moment that the mechanists were right in holding that mind was an emanation of matter. Then mind should prove ultimately capable of being analysed into the fundamental constituents of matter. Let us further assume that physicists are right in their view that these ultimate constituents are different kinds of atoms, and that each atom is, according to the analysis already given, composed of a hydrogen nucleus charged with an amount of positive electricity differing in different atoms, surrounded by electrons of negative electricity varying in number according to the strength of the charge of the nucleus.

Here we have two ultimate constituents, namely, nuclei of positive and electrons of negative electricity, which can be arranged in all sorts of different ways, and the intensity of whose electrical charge can be multiplied indefinitely and indefinitely diminished. Changes in matter will be then due either to changes in the pattern or arrangement of the nuclei and electrons, or in the number of the electrons, or to differences in the degree of electricity with which they are charged, or to all these factors; such changes, and not the presence of any new constituents, being made responsible for the production of all the different types of matter which the universe contains.

Now changes so envisaged are quantitative changes; they consist in and are caused by the presence or absence of varying amounts of certain things. The constituents of the entity which has

changed remain the same in nature, but there are more of some and less of others. Such changes must be distinguished from qualitative changes. In order to obtain a qualitative change we must postulate not more or less of the same things, but the introduction of some new thing. By a qualitative change, that is to say, we mean a change that involves not more or less of the same quantity, as when a thing becomes hotter or less hot, sweeter or less sweet, but the appearance of a *quality* of an entirely new type. For the emergence of such a quality fresh arrangements of what was there before, or the presence or absence of more or less of what was there before, will fail to account, unless indeed we are prepared to grant the existence of some entirely unknown additional characteristic of the atoms. Yet such an assumption is one that no materialist can make, since the additional unknown quality might turn out to be mental.

Emotions and their Bodily Equivalents.—One or two examples may serve to illustrate the point. Let us assume for a moment that the materialists are right in supposing that every mental state is entirely bound up with and conditioned by a preceding bodily state. That this is indeed, at least to some extent, the case the ordinary phenomena of mind-body interaction bear abundant witness. Thus, to take an example, physiologists have discovered that the emotion of fear is intimately connected with the adrenal glands, situated near the kidneys. Other

glands connected with the adrenal glands play some part in causing the fear emotion, but the adrenal glands are usually regarded as the specific physiological equivalent for fear. Thus, when the individual feels fear, the medullary portions of the adrenal glands discharge a certain amount of fluid secretion, and this secretion is accompanied by all the usual bodily symptoms of fear, such as the raising of the hair, dilatation of the pupils, profuse perspiration, quickening of the pulse and so forth.

Now let us suppose that in any given case of fear the adrenal glands discharge an x amount of fluid, and let us further suppose with the materialists that awareness of this secretion *is* the experienced emotion.[1] It will follow that, if the amount of fluid secreted is $2x$ the fear will be more intense, and if it is $\frac{1}{2}x$ it will be less intense, so that we shall be able to account for all quantitative changes in the amount of fear felt in terms of differing amounts of secretion.

But fear shades imperceptibly into other mental states, such as horror, repulsion and disgust, which, though allied to, are qualitatively different from fear. What is to be their physiological equivalent? Clearly not $2x$, nor $\frac{1}{2}x$, nor any other multiple or fraction of x, since these are already scheduled as the equivalents of more fear and less fear. Is there then another gland appropriate to disgust, and another to horror? Possibly there is, although physiologists have not yet located it. But what

[1] See Chapter IV, pp. 133-136, for a further account of the nature and causation of emotion.

of the infinite number of intermediate mental states between fear and disgust which shade into fear on the one side and into disgust on the other, some of which are more like fear and some more like disgust, but each of which is slightly different both from fear and from disgust, and from every other intermediate state? Are there specific glands or other physiological equivalents for all of them? Scarcely, since, while the number of such differing states is infinite, the number of bodily organs and of their combinations is necessarily finite. It would seem, therefore, that slight *qualitative* changes in emotion are not to be accounted for on a physiological basis.

To take another example, the thought of a coming ordeal causes the heart to beat more quickly and the kidney to excrete urine, thus establishing the existence of a connection between the heart and the kidney on the one hand, and the mind on the other. According to the materialist hypothesis we cannot assume a causal connection operating from the mind to the heart; we must, therefore, suppose that it is some actual physical condition which causes the dread inspired by the thought of the ordeal, and that this actual physical condition also quickens the beat of the heart. Or, possibly, the quickened heart beat is itself the cause of the feeling of dread, although in this event we should still have to postulate the *physical* existence of the thought of the future ordeal in order to cause the quickened heart beat. The difficulty in any event is that while the thought of a coming event, *e.g.*, of a lecture to twenty miners,

causes considerable mental disturbance, the thought of a similar event, *e.g.*, of giving the same lecture to twenty students, causes none. In each case the act of thinking is the same; what is different is the content or contents of the act, or, in other words, the object upon which the act is directed. This content or object is, according to some psychological theories, the twenty miners or twenty students themselves, according to others, a mental state or image corresponding to the twenty miners or the twenty students. But even if we accept the mental image, how are we, in any event, to postulate the existence of one bodily physiological state corresponding to and causative of the thought of twenty miners, and of another corresponding to and causative of the thought of twenty students? Yet this is what we are required to do, if we are to hold that a physiological state must precede and condition every thought and every emotion. What is more, since the thought of the twenty miners causes an emotion of dread while the thought of the twenty students may produce one of pleasure, the thought of the twenty miners must be caused by a different state from that which causes the thought of twenty students. Would there then be yet a third physiological state corresponding to and causative of the thought of addressing twenty M.P.'s? The conclusion seems to be first, that by no possible combination of physiological states can we account for *all* the variations and modifications of mental states, and secondly, that physiological states can in any

event only produce quantitative changes of a greater or less degree of intensity of emotion of the same sort, and are unable to account for qualitative changes between emotions of different sorts.

Conclusions as to Relationship between Mind and Matter.—If this reasoning is correct, we are justified in holding that no possible arrangements of the electrons and nuclei known to the physicists can account for and determine the qualities of mind; and they cannot in our view do this for the reason that these qualities are of an entirely different character from anything that is known to the world either of physics or of physiology.

This conclusion seems to be in accordance with the obvious facts of experience. Putting aside for the moment the question which philosophy discusses of whether *all* the things of which we have knowledge are mental, it is obvious that *some* of the things of which we are immediately aware, our thoughts, dreams, memories and hallucinations, seem to be different in kind from the matter of which the materialists speak.

Matter, for example, can be weighed; yet who can weigh the inspiration which breathes in a Shelleyan lyric? Matter is of enormous spatial extent, while mind and its creations occupy no space at all; yet nobody would therefore dream of asserting that the sun's mass is greater than Beethoven's Ninth Symphony. And the assertion would not be made because it is at once realised that the

sun's mass and the Ninth Symphony are essentially incomparable. They are incomparable because, belonging as they do to different worlds, they must be measured by different standards. Any attempt to compare them with a view to showing that one is greater than the other, would be like applying a tape measure to measure the heat of a conservatory in order to show that it is noisier than the height of a room.

Once this point is grasped, it will be seen that the materialist's insistence upon the insignificance of mind in the vast immensities of time and space falls to the ground. Mind is insignificant only when judged by spatial and temporal standards, that is, by standards appropriate not to mind but to matter. In endeavouring, therefore, to apply these standards to mind in order to convince us of its unimportance, the materialist is begging the very question he is professing to answer. He is assuming, that is to say, that mind can be judged by material standards, and that it can be so judged *because* it is material.

Our conclusion is, then, that mind is essentially different in character from matter. Its qualities and attributes are different, it belongs to a different system of causation, and it fails to exhibit any necessary correspondence between its own variations in *quality* and the purely *quantitative* variations of order and arrangement of which alone matter is susceptible.

Now the materialists held that between mind and matter there was a connection of such a kind that matter could be said in all cases not only to deter-

mine but even to generate mind. But if there is a connection between A and B, such that A may be said to produce B, the qualities of B might be expected to show some correspondence with those of A. If they do not show such a correspondence, if, in short, they appear to be different in kind, then we are justified in asserting that, whatever may be the connection between A and B, it is not of the kind that we assert when we say that A is the generator or creator of B. It appears to follow that mind and its creations are distinct from matter, so distinct indeed that no attempt to explain the universe which starts from and with matter alone, can ever reach mind.

Mind, therefore, must be regarded as fundamental; it is not a mere emanation from matter, nor is it a chance and temporary inhabitant of a purely material universe. On the contrary, mind must be thought of as being at least as real and as fundamental as matter, and no explanation of the universe which fails to provide for the existence of mind as a something unique and fundamental can be satisfactory.

The Idealist Position.—But can we not go further? If the attempt to explain mind in terms of matter has failed, what of the reverse explanation of matter in terms of mind? Mind, it is agreed, exists and is not matter. But does anything exist except mind? Is there indeed such a thing as matter at all?

These are questions which many thinkers have

answered by denying the existence of matter, as completely and more plausibly than the mechanists denied the existence of mind.

Philosophers, anxious to construct a universe which should be conformable with their wishes, have roundly declared matter to be a mental illusion. The universe in its real nature, they have declared, is mental through and through, so that, on a true view of things, not only matter but error, imperfection, plurality and finiteness will be found to disappear, the ultimate nature of reality being revealed as an all-embracing, perfectly harmonious, mind. The desire for unity seems to be ineradicable in the human breast. At any rate few human minds seem able to contemplate with equanimity a universe which contains at least two things. Thus, while scientists have (until quite recent years) tended on the whole to eliminate mind in the interests of matter, philosophers have usually striven to eliminate matter in the interests of mind.

Into the reasons for this view of the universe as mental we shall enter in the next chapter. If these reasons fail to convince us, we shall then be led to enquire into the nature of a universe in which room must be found for both matter and mind, and endeavour to provide some sort of answer to the apparently insoluble question of their interaction.

CHAPTER III

IDEALISM, OR THE BELIEF IN THE NON-EXISTENCE OF MATTER

Introductory.—I propose in this chapter to consider the reasons which have been advanced in favour of the view that mind is the only thing that exists in the universe. These reasons are mainly philosophical in character, and to dwell upon them at any length would take us too far outside the scope of the present work. Without, therefore, attempting to give in detail the views of any particular thinker, I will endeavour to summarise so far as possible the main features of what is called the Idealist [1] position in philosophy.

The belief in the non-existence of matter assumes a number of different forms which, for purposes of convenience, we will group under two heads. Let us suppose for a moment that the universe is mind and nothing but mind. Then we may hold (1) that each individual mind is only a manifestation, or localised portion, of some universal mind or spiritual force which is the reality underlying the world of appear-

[1] The word "Idealist" in this connection has nothing to do with *ideals*. It is derived from the word "*ideas*," and is the name given to that school of thought which holds that ideas are the only things which can be known.

ances, that its individuality is temporary only and that it will one day be re-absorbed in the all-embracing mind or force from which it emanated. This view, sometimes called Spiritual Monism, is in essence that of the German philosopher Hegel; it is held in a somewhat different form by Schopenhauer, and again in a different form by Bergson. Or we may hold (2) that each individual mind is an entirely distinct unit, existing independently of every other mind and inhabiting a private universe of its own, in such a way that nothing that happens in my universe can by any possibility be the same as that which happens in anybody else's universe. This view, which is sometimes called Subjective Idealism and which from another point of view is known as Spiritual Monadism or Pluralism, was held by the philosopher Leibnitz, was developed along somewhat different lines by the English philosophers Berkeley and Hume, and appears again in modern times (though their supporters would perhaps deny this) in the works of the Italian philosophers Croce and Gentile.

We will consider the second alternative first.

I. Subjective Idealism or Spiritual Monadism

If I press my tongue against my teeth and ask the question, "What is it that I experience or am aware of?" the ordinary answer would be, "I am aware of my teeth." But is the answer correct? Is not what I really experience a feeling in my tongue, a

feeling caused by the contact between my tongue and my teeth, but not a feeling in my teeth ?

Suppose, now, that I press my fingers against the table. Is what I experience the table ? At first glance it would seem that this is the case. But later reflection suggests that the immediate object of my experience, the content of which, as we say, I am aware, is a sensation in my fingers, a sensation in this case of hardness, smoothness and coolness.

To take another example, let us suppose that I stand two feet away from a fire. I experience heat, and I say that the heat is a property of the fire. If, however, I approach nearer the fire, so that the distance that separates me from it diminishes from two feet to two inches, the sensation of heat grows in intensity until it passes insensibly into one of pain. Does that mean that the pain is the fire ? Clearly not. Yet the pain is only a more intense degree of the heat. It seems to follow, then, that the heat was not a quality of the fire, but was a feeling or sensation of mine.

Let us now extend the scope of our illustrations and consider what modern science has to say with regard to the machinery of sensation. Taking first the case of visual sensations, we find that their origin is described more or less in the following terms : a physical object sends out rays of light which, after travelling through the ether, impinge upon the optical nerves. The resultant disturbance in the optical nerves is conveyed by purely neutral processes to the brain, where it causes a further disturb-

ance in the cerebral cortex. It is our consciousness of this disturbance in the cerebral cortex which constitutes our seeing of the object. That, in fact, of which we are directly aware is not the object, but a disturbance in our brain or, in other words, a sensation of our own. Similarly with regard to hearing. A sound is a vibration in the air; this vibration ultimately impinges on our ear drums; the resultant effect upon the ear drums is then conveyed by the nerves to the brain. Here it enters into consciousness and we become aware of it. The consciousness or becoming aware is called hearing the sound.

It appears, then, that sensory experience is not a process which brings us directly into touch with objects existing in the outside world, but is rather a process in which we become aware of our own sensations and feelings. Just as what appeared to be an experience of the teeth turned out to be a feeling in the tongue, an experience of the table a feeling of hardness and coldness in the fingers, and an experience of the fire a feeling of warmth and then of pain in ourselves, so all experience of the outer world will be found to resolve itself into a series of feelings and sensations of our own.

Representationalism. The Mind as a Cinematograph Screen.—These considerations have led many thinkers to adopt a position known in the history of Philosophy as that of Representationalism. To the ordinary man the mind appears to be a kind of

searchlight, which lights up for him the outer world and tells him in terms of his sensations what it contains. But, for the reasons already given, this view is difficult to maintain. As an alternative, therefore, to the searchlight conception, we are asked to think of the brain as a sort of dark cabinet, which contains a lighted screen, like the sheet upon which pictures are thrown in a cinema. The light which illuminates the screen is consciousness. When we are brought into contact with the outside world, our senses throw upon the screen pictures or representations of the objects they experience, and it is of these pictures or representations that we are aware when, as we say, we know an object.

Thus in sensation three elements are involved: (*a*) the knowing mind; (*b*) the representations or pictures of the outside world which the senses convey to the brain, and which are what we know; (*c*) the external objects which cause the pictures or representations to appear. Knowledge, then, is a process in which (*a*) always knows (*b*) but never knows (*c*), although (*c*) is the cause of (*b*).

But, as the philosopher Berkeley showed, this conception amounts in effect to a complete denial of the existence of an external world. If we always know (*b*) and never know (*c*), we cannot know anything about (*c*); we cannot, therefore, know that (*c*) has the power of causing (*b*), nor can we even know that (*c*) exists. We could only know these things if we knew (*c*) directly, but, as we have seen, whenever we try to know (*c*) directly, (*b*) comes in

between us and (*c*) and insists on being known instead.

Hence it would seem that we are completely shut up within the circle of our own ideas and sensations.

It is only on this assumption that we can explain many otherwise inexplicable phenomena.

Secondary Qualities.—There is, for example, the case of conflicting and erroneous perceptions. When a colour blind man and myself look at the same carnation, I see a green carnation and he sees a blue one. What explanation are we to give of this discrepancy on common sense lines? The two different perceptions must, it is said, be due not to a difference in what is seen, but to differences in the two seers. It is clear that the carnation cannot be both green and blue at the same time, and it seems to follow, therefore, either that I am seeing it correctly and the colour-blind man incorrectly, or that the colour-blind man is seeing it correctly and I incorrectly, or that we are both looking at different things. The suggestion that either the colour-blind man or myself is making a mistake leads us into the difficulty of explaining how either of us can perceive what is not there; the belief that we are both looking at different things is open to the objection that we do, in fact, appear to be looking at the same object situated in the same place. It is difficult to see how a green thing and a blue thing can both be in the same place at the same time, since there seems to be no option but to adopt the alternative

that the colour does not belong to the carnation, but is simply an idea or sensation in the minds of the seers. Once this is granted, the fact that I see a different colour from that which the colour-blind man sees is explicable naturally enough as being due to differences in the constitution of our visual and nervous systems, and hence of our resultant sensations and ideas.

But what is true of colour is equally true of size. Berkeley has an ingenious argument connected with the leg of a cheese mite. This is so small that no human eye can, except with the aid of a microscope, detect it. Are we then to suppose, asks Berkeley, that the mite is also unable to see her own leg? How, then, is she to attend to it, to clean it, to use it effectively or to remove it from impending danger? Clearly the leg of the mite will look as large to the mite as our own legs do to us. What, then, is the real size of the leg of the mite? It appears to have different sizes according to the eyes that look at it: to the mite one size; to the human eye plus a microscope another; to the human eye unassisted none at all.

Does it not follow that size, instead of being a stable inherent attribute of the object, is a quality of our seeing, and that the apparent size of an object differs like its colour according to the nature of the person or mind which apprehends it?

What is true of colour and size is equally true of shape. Consider the shape of a penny. There exists a presumption in favour of supposing that the shape

of a penny is circular, but it is difficult to discover the grounds for this view. If we look at a penny from every point of view except one, it presents the appearance of an ellipse, an ellipse which varies in degrees of fatness or thinness according to the angle of vision. From only one point of view, namely, from that of a person regarding the penny from a position perpendicularly above (or below) it, does the penny appear to be circular. According to what principle, then, do we select the circular appearance of the penny from among the infinite number of varying elliptical appearances and assert that it is the *real* appearance ? It may be said that all the lines drawn from the centre of a penny to the circumference are equal in length, that we can measure the circumference of the penny and find that it equals $2\pi r$, and that the penny conforms in other ways with the known definition of a circle. But these considerations do not help us. All that they show is that the appearance presented by the penny to compass and ruler is that of a circle ; but why should this be the real appearance any more than that presented to my eyes when they are stationed at a point one foot above and two feet to the right of the penny ? And what shape is a circle ? We want to know the real shape of the penny. It does not help matters to tell us that it is that sort of shape which we have agreed to call circular. For what is a " circular shape " ? The shape of a penny ? But that is a circular argument.

We seem driven to the same conclusion as before. The penny has no one shape in its own right, but as

many shapes as there are points of observation. The shape then is a characteristic not of the penny at all, but of the observer's mind, and is projected into the penny by that mind.

Now, what is true of colour and size and shape can be shown by similar reasoning to be true of every other quality. It is true of temperature, of sweetness or sourness, of sounds, and of qualities that are known by the sense of smell. All these turn out to be states or ideas in the perceiving mind, so that, if the object were no longer perceived, its qualities would no longer exist.

Objects as the Sum of their Qualities.—But what is an object if it is not the sum total of its qualities? Take its qualities away and what is left? Consider for example, a chocolate. A chocolate is brown, soft, sticky and sweet to the taste. Let us abstract these qualities one by one and consider what remains. What is it that had the qualities but now has them no longer? We may, of course, say that what is left is the chocolate minus its colour, consistency and taste. But is this residue anything at all? If it is, it is only so in virtue of such qualities as we may have left remaining in it. Without these remaining qualities it would be literally nothing. In so far as it is anything, it is only so because of the qualities which make it what it is and enable it to be known. If then the qualities of an object are removed there is nothing left. There is no underlying substratum or brute material, which is itself without qualities,

but which constitutes as it were the soil in which the qualities inhere. Even if we could conceive of such a substratum, we could only do so in terms of the qualities which it possessed, that is to say, in so far as it was not a substratum at all.

An object, therefore, is not a something which has qualities ; it is the sum total or meeting place of the qualities which are said to be the qualities of the object. But qualities, as we have already seen, are not things which exist in the external world. They are states of or ideas in the mind of the person who perceives the qualities. It follows, therefore, that objects are not independent material existents ; they are events or ideas in the psychology of the perceiver. In Berkeley's words: "Their existence consists in their being perceived."

If the above reasoning is valid, it would seem that the belief in an external world of matter must be abandoned. All that we know, all that we ever can know are the states of and events in our own minds. Each of us lives shut up within the prison of his own ideas and sensations, and we can never by any possibility travel outside its walls.

What is true of external objects in general is true also of our own bodies, and the universe thus reduces itself to a collection of experiencing minds, the objects of whose experience lie within the minds which experience them.

Objections to Subjective Idealism.—Although the above analysis is difficult to refute—indeed, in the

opinion of many, it is logically irrefutable—there is no reason to suppose that it is true. Philosophers have often succeeded in establishing positions against which no good arguments can be advanced, but which are not, therefore, to be regarded as bearing any necessary relation to the facts of the universe as it exists.

A consideration of the arguments, such as they are, which have seemed to many to render the position which we have just outlined untenable, is beyond our present purpose. They form, indeed, the foundation of a whole school of philosophical thought known as Realism, and the controversy between the Realists on the one hand and the Subjective Idealists, as they are called, on the other, never has been and never will be settled conclusively in favour of either school. The most I can hope to do is to refer briefly to two of the most important arguments brought forward by the Realists, before passing on to a consideration of the more important form of Idealism which is known as Monism.

In the first place it may be contended that the Idealist position rests upon a failure to make a distinction between the knowing mind and the objects of its knowledge. My knowledge of the table, it may be said, is one thing and the table which I know is another. When my consciousness ceases my knowledge of the table ceases also, but this circumstance makes no difference to the table. Knowledge, in fact, involves two things, that which knows and that which is known, so that in knowledge the mind is

brought face to face with something other than itself. Hence an act of knowledge cannot be the object of the act, and it follows, therefore, that the object of the knowing mind is something other than the mind itself. Once this fact is established, is there any reason why the " something other " should not be an external object ?

The arguments to the contrary are all found to proceed from the circumstance that different people have different perceptions of the same thing, from which it seems to follow that some perceptions are erroneous. But the fact that we perceive an object wrongly does not mean that we do not perceive it. The different perceptions which people have of the same object are, it is agreed, due to differences in themselves. These differences are partly physiological, partly psychological. Not only may my sense organs be more or less sensitive than yours, but they may be differently trained. My interests also may be different, and, being different, will result in a difference of attention. Thus if we take the case of a red rose, R, it is probable that an artist and a botanist will each of them see it differently, because they have been trained to look at different things and are therefore interested in different things. A colour blind man will have yet a third perception of the red rose. Now these three different perceptions, which we will call the perceptions of r^1, r^2 and r^3, are perceptions of the same thing in the sense that they are each of them perceptions of the same R, but perceptions of different things in the sense that

each delimits a different part of the presented whole R for its attention, and therefore emphasises a different selection of its qualities.

R exists independently of all perceivers, but r^1, r^2, r^3 are called into being as separately delimited parts of R by differences in the perceivers' interests and acts of attention. They do not, that is to say, exist *as separate entities* except when they are perceived, and they only *appear* to be separate entities even then.

As for erroneous perception, this would appear to spring from the mind's capacity for going out beyond the material actually given in sensation, and constructing objects which appear to be warranted by that material but which, in point of fact, are not. We think we see objects, and we do in fact see them, but we never see all of them. We see, for example, two legs of the table, the top and one of the sides, but we do not by any means see all the table, and we have to guess the rest from the parts we do see; this act of guessing or construction is performed by the mind unconsciously, so that we come to think that we have actually seen the whole table. Now in performing the function of supplying the whole from the few fragments which are in fact presented to it, mind may make mistakes. It may proceed on lines which are warranted by ninety-nine of the tables which it has seen, but which are not warranted by the hundredth table, which happens to be different. Hence we get what appears to be an erroneous perception, but is really an erroneous mental construction from a true perception. Erroneous per-

ceptions do not, therefore, prove, any more than do contradictory perceptions, that we are not in touch with a world of external objects. On the contrary, it seems possible to explain both how different people can perceive the same object differently and how they can perceive it wrongly without supposing, as the Idealists do, that the object is in the mind of the perceiver.

And what, in the second place, is the precise meaning of the word "in"? Does not the use of this word conceal an ambiguity? As I have already pointed out, the distinction between the act of knowing and the object, whatever it may be, which is known, appears to be one which it is impossible to ignore. When, therefore, it is said that the objects of sense perception are "in" the mind, it becomes important to ask whether we really mean the objects themselves, or whether we mean the act of knowing them. As Mr. Bertrand Russell has pointed out, we are accustomed to use the words "in the mind" somewhat loosely, and this looseness of expression has given rise to a corresponding confusion of thought. Thus we talk of "having a person in mind" or "bearing a thing in mind," when what we really mean is having a thought of that person or bearing a thought of that thing in mind. Nobody really supposes that St. Paul's Cathedral is literally in my mind when I think of it; what is in my mind is a thought of St. Paul's Cathedral, and it is because the Idealists have confused the thought with the thing thought of, that they have succeeded in reduc-

ing the external world of objects to a series of mental impressions and sensations. If the distinction between act of thinking and object thought of is carefully observed, it will be found that the Idealist contentions, in so far as they are true, are true only of the first; they do not apply to or affect the second.

The above is a very inadequate sketch of the lines along which the Idealist position is commonly attacked. But the arguments are not conclusive, and it is always possible for a consistent and logical Idealist to maintain his ground intact. This, however, he usually does by abandoning the outworks of Subjective Idealism or Spiritual Monadism and taking refuge in the innermost strongholds of Spiritual Monism.

The Logical Development of Subjective Idealism.— Why does he adopt this latter position? Because of the spiritual loneliness to which the Subjective Idealist is exposed, and the desert of solitude to which his reasoning reduces the universe. For the position of Berkeley, which we have outlined above, when developed to its logical conclusion, forbids us to acknowledge the existence of anything except the ideas and the sensations of the experiencing mind. Berkeley himself shrank from this development, and introduced God as a foundation for a world which his philosophy had otherwise laid in ruins; but Hume, at once more logical and more light-hearted in his cheerful acquiescence in the results of his logic,

pushed the arguments of Berkeley as far as they could be made to go, that is to say, too far to be comfortable for most of us.

If external objects are to be resolved into the sensations and ideas of the experiencing mind, it is clear that we must subject those external objects which are other people to the same analysis. The face of a friend is nothing but a series of my visual impressions ; his body of my tactile sensations ; his voice of the vibrations in the chords leading from my ear to my brain. It follows, then, that his existence is nothing but a set of experiences of mine. As for his mind, it is clear that I do not know it directly ; it is at best an inference from his behaviour. Because he makes certain noises in his throat and certain gestures with his hands, I judge that he has the same sort of mind as I know myself to possess when I make similar noises and gestures. But since the noises and gestures are shown on analysis to be not movements of his, but experiences of mine, the mind which is inferred from them must, considered as an independent existence, be held to be equally illusory.

Not only, therefore, does Subjective Idealism destroy the world of objects ; it eliminates the companionship of other minds. The boundaries of the self are enlarged until they become coterminous with the universe. We are left, in short, with a universe in which nothing can be known to exist except our own experiences, just because it is nothing but our own experiences.

The view that the experiences of the self are the

only things which exist is known as Solipsism. Solipsism is a danger that besets all forms of philosophical theory of the type that we have been considering, and there is no logical answer to it. At the same time, however, there is no reason to believe that it is true, and when we reflect that it results in a universe which is alien from human wishes—even the most misanthropic philosopher would experience embarrassment if deprived of objects to justify his misanthropy—we shall find no difficulty in accounting for the unpopularity of the theory among philosophers. Most philosophers, accordingly, while accepting Berkeley's arguments as to the non-existence of matter, have rejected that development of them which demonstrated the non-existence of anything but the experiencing mind. They have sought to show, that is to say, that in addition to my mind there are other minds, minds moreover, with which my mind is able to communicate, because both it and they are in the long run only aspects of a universal mind, which embraces, which in fact *is*, the universe itself. This is the doctrine of Monism, which we must now consider.

II. Spiritual Monism

The arguments for philosophical Monism are not in general easy to grasp, and many of them are, in addition, highly technical. They endeavour to show that a thing, when taken by itself, is both meaningless and contradictory; it only obtains meaning when taken in conjunction with its context. Since

a thing which is devoid of its full meaning is not fully and completely a thing, we may proceed a step further and say that the thing only achieves full *reality* when taken in conjunction with its context. The context, in fact, must be assumed to be part of the thing in order that the thing may really be a thing at all. One or two examples may help to illustrate this rather surprising statement.

Let us consider the nature of a symphony and of its constituent notes. Now there are two quite different ways in which we can regard a symphony. According to the first, we shall think of it merely as an aggregate or accumulation of the various notes of which it is composed, just as we may think of a picture as the sum total of the various paints and colours which the artist places upon his canvas. According to the second we shall regard it not merely as an aggregate, but as a unity or whole, which is brought into existence by the coming together of its parts, but which is, nevertheless, a new and complete entity over and above the sum of its parts. Each note in the symphony can be regarded from the same double point of view. It is at one and the same time a number of isolated vibrations and an integral and component part of the symphony as a whole, standing in certain necessary relations to the notes which precede and succeed it, and occupying a definite position in the symphonic plan. Now, just as the symphony, taken as a whole, is more than the sum of its parts, so the note, taken as an integral part of the symphony, taken, that is

to say, in conjunction with the relations that link it to the other notes, is literally a different note from what it would be if taken in isolation ; and it is different just because of these relations and linkages, because, in other words, of its place in the context of the symphony as a whole.

We have already, in our second chapter, had occasion to notice the parallel case of the human body. A bodily organ considered in isolation, as it can be for the purposes of illustration, is literally a different thing from the same organ occupying a specific place in the body as a whole, and acting and interacting with other organs. A stomach without bowels would not be a stomach ; a brain without the nerves that lead into it would not be a brain. For this reason, the body cannot be considered simply as an arithmetical collection of the organs it contains. Its pipes and tubes and the relations and interactions between them form a co-ordinated whole which, though it embraces these organs, is yet more than they. The whole, in fact, is more than the arithmetical sum of the parts ; and, since the parts are different, when taken as parts of the whole, from what they would be as separate entities, the nature of the parts as parts may be considered to be determined by their place in the whole.

Now the contention of the Idealists is that all so-called objects are at the same time wholes and parts ; they are like the symphony and the body in the sense that they are wholes composed of parts and their relations, and at the same time like the

note and the physiological organ in the sense that they are themselves parts of larger wholes. In neither aspect, however, can they be taken alone, if by the word "alone" we mean "bereft of their relationships." A further illustration may help us here. If we consider the nature of any object—a hen's egg, for example—we shall find that all the things we wish to say about it involve describing it in terms of something else. It is, for example, more oval than a cricket ball, more brittle than india-rubber, larger than a wren's egg, and smaller than an emu's egg. Unless the egg stood in all these relationships to other objects, it would not be the egg that it is. Thus the relationship of the egg to other objects determines and forms part of the nature of the egg, and cannot be dissociated from it, nor it from them. What follows ? Simply that everything in the universe is linked on by its relationships to everything else. Nothing stands alone; it is part of a whole, a whole which is composed of all the things to which it is related, and of its relationships to them, so that any attempt to abstract it from the whole would destroy its real nature. This whole is itself part of another whole, that again of another, and so we proceed until we arrive at the whole which comprises all the other wholes within itself and is, therefore, the sum total of all that is. This final all-embracing whole is Hegel's Absolute.

Hegel's Absolute.—An example of Mr. Russell's may help to give a more concrete idea of this difficult

conception. Just as a comparative anatomist is able, after inspecting a single bone, to reconstruct the rest of the animal in virtue of the indications contained in the bone itself of what the rest must have been, so the philosopher is able, by an inspection of any apparent part, to show not only that it is not the isolated thing it appears to be, but that the whole of which it forms part must be of such and such a character.

Thus every apparently separate piece of reality has, as it were, hooks which grapple it to the next piece, the next piece in turn has fresh hooks, and so we proceed until the whole universe is reconstructed.

On this view the differences between things are unreal. They are illusions born of the partial character of our vision. If we were the whole looking at the whole, instead of a part surveying a part, we should see the universe for what it is, a single and complete unity. Even as things are, however, we are able by a process of reasoning to put together the various finite pieces of reality with which our partial vision presents us, and so to exhibit reality itself as one perfectly harmonious and inter-related whole.

This conception, which is true of the world of things, is equally true of the world of thought. If we take any abstract idea of thought, we shall see that it is just as little able to stand by itself as was the note in the symphony or the egg. Further than this, it is found in each case to be contradicted by another equally valid abstract idea. Thus the

notion of Free Will, if taken in isolation, is perfectly valid and quite irrefutable. But then so is the notion of Determinism. They cannot both be true, and neither seems willing to give way to the other. The difficulty with which we are faced here arises from the process of abstraction, which is involved in the attempt to take each of these notions by itself. Each notion so taken is incomplete, just as the egg taken by itself was incomplete. To remove this incompleteness we must combine it with its contrary idea, which is also incomplete. The resultant composite idea, though truer than either of the two contrary ideas which have been enfolded within it, is also incomplete in the sense that it too will be opposed by a contrary idea, which contradicts it. The putting together of the new incomplete idea and its contrary will result in yet another composite idea, more embracing than the preceding ideas, but still incomplete. By this method we can proceed indefinitely, until we reach the one final all-embracing idea to which there will be no contrary. This idea alone will be complete, and this idea alone will be true. This one all-embracing idea is the Absolute, just as the one whole which contained all the incomplete parts was the Absolute. And the two Absolutes are not different Absolutes, but the same Absolute. For, since all differences are illusory and due to our partial apprehension, the difference between knowledge and its object is itself illusory. Therefore, to the Absolute itself, whose apprehension is not partial but complete, this

apparent difference will disappear, and ultimate truth and ultimate reality, the world of thought and the world of things, will be found to be one and the same.

Our Minds as Aspects of a Universal Whole.— There is something imposing about this conception, and many philosophers have been found to subscribe to it. It provides, moreover, an answer to the difficulty into which Spiritual Monadism led us, the difficulty, that is to say, of being compelled to regard the individual's mental states as the only things existing in the universe.

Our minds are no longer isolated entities enclosed within the circle of their own ideas and impressions. They are aspects of a universal mind, bound to it by relations which form part of themselves and of it, and only appearing to be different from it, and from one another, because of the partiality and finiteness necessarily inherent in their own view of themselves and of the universe. To God, as we are accustomed to say, all things are intelligible, and to God, presumably, all things are one. Similarly in the Absolute all the differences between various minds will disappear. This is not to say that the absorption of the individual in the Absolute is an event destined to take place in the future, but unrealised up to the present. The Absolute exists here and now ; there is, in fact, nothing but the Absolute, the process by which difference and incompleteness give way to unity and completedness being simply that of the mind's rational ascent from a lower degree of truth

to a higher. As we make this ascent by philosophy, not only do we see things increasingly as one, but, in virtue of the same ascent and because of it, we ourselves become increasingly one with the things we see. As we achieve in thought greater unity with the universe, the element of finiteness in our thinking diminishes, and we obtain, therefore, a truer because more complete view of the world. It is this view which represents the world as a harmonious unity without division, plurality or imperfection.

Differences between things, individuality, incompleteness, and plurality all disappear, so that, as we extend the bounds of our reasoning, we glimpse the truth that thinking in its ultimate process would reveal a world from which they were completely absent.

By this means we succeed in retaining the universe of the Subjective Idealist in so far as it eliminates matter, while escaping the loneliness of being its sole inhabitants. Not only are my mind and its objects (these objects being also part of my mind) not the only things in the universe, but they are not even mine. They are partial aspects of a universal mind, apparently separated from it by a falsifying act of thought, but seen to be indissolubly one with it on a closer and more profound view.

Before we proceed to consider how far we can ourselves subscribe to this view, let us pause to take stock of the road along which we have travelled, and the nature of the universe in which we have temporarily halted.

III. Different Forms of Monism

Summary of Previous Argument.—We began by considering, under the name of Spiritual Monadism or Subjective Idealism, the arguments of those philosophers who endeavour to show that nothing can be known except the ideas, impressions and sensations of the knower. We are confined, that is to say, on this view, to a knowledge of our own psychological states. If the arguments of these thinkers are valid, they do succeed in showing that there is no such thing as matter in the world, or, rather, that if there is such a thing as matter, we cannot possibly know it; on the contrary, we can explain and understand everything that we experience without it. It may be said that the fact that we do not know matter and never meet it in our experience is no reason for supposing that it does not exist. This is true; but it is equally true that it affords no ground for supposing that it does. To take a hypothetical case which will serve as an analogy, we do not know that the planet Venus is not inhabited by long-eared Jabberwoks who spend their time doing purple quadratic equations. But the fact that we do not know that this is not the case is certainly no reason for supposing that it is. On the contrary, it affords a strong presumption for supposing that it is not. Similarly the Idealist would argue that the fact that we never meet with matter in our experience affords a reasonable ground for supposing that there is no such thing as matter.

But the proof that in perception we meet with nothing external to ourselves, satisfactory so far as matter is concerned, has unfortunate consequences in other directions. Having once embarked upon a train of argument which showed that only our own psychological states could be known, the Subjective Idealist found that he was unable to stop until he had eliminated from the world not only matter but other minds as well. If, in short, you reduce the universe to a collection of spiritual, atomic units, each of which is a world unto itself, you can only do so at the cost of making each unit a self-contained and inviolable whole, totally incapable of travelling outside itself in such a way as to be able to communicate with any of the others, or of admitting any communication from the others. Whenever it endeavours to do so, its own thoughts, feelings, sensations, and so forth, come between it and the other units, just as they did when it endeavoured to achieve contact with matter. The same argument, therefore, which suggested to the atomic unit, which is the self, a disbelief in matter suggests also a disbelief in anything except itself.

As I have said above, there is no known method of refuting this position by logic ; on the other hand, there is no reason to suppose that it is true. Moreover, it is not a position which any philosopher would desire to hold.

We find, therefore, that the notion of a universe composed of a number of spiritual atomic units, unable to get outside themselves or to communicate

one with another, presently gives way to a somewhat different notion of the universe as the embodiment of one all-embracing mind. In this universe all differences between things are stigmatised as unreal, and the distinction between one unit and another accordingly vanishes. So does the distinction between mind and its objects. It follows that the so-called objects of mind are, as it were, infected by and part of the mind that knows them. Being thus infected by, and part of, the mind, they cannot be considered to be material. Our universe, therefore, is still devoid of matter. Since, however, each mind is merely an aspect of the whole mind, of which it forms part and which is wholly present in it, we are no longer compelled to think of our own minds as the only things which exist in the universe.

Monism, or the view that there is only one thing in the world, is a very widely held belief. So far we have only considered its purely logical expression in the philosophy of Hegel. Hegel called this one thing the Absolute, and thought of it as a purely intellectual structure. The monistic conception may, however, be met with in a number of different forms. The universe which we know is full of things that cause us distress. We meet with pain, with evil, with error and with imperfection. We do not like to think that these things belong to the fundamental plan and nature of the universe ; on the contrary, we wish to think of them as unreal and impermanent in some sense in which beauty, goodness and truth are real and permanent. We are led, therefore, to con-

struct by reasoning a universe which presents the real nature of things as good, beautiful and true, and which stigmatises error, pain, suffering and imperfection as unreal and illusory appearances, whose apparent reality is a figment of our finite understandings.

It is an interesting speculation to consider how far the desire to construct such a universe, a universe, that is to say, which is a comfortable habitation for the human spirit, is the mainspring which has set most philosophers working. Since the universe which we know persistently flouts our wishes, there is a natural desire to construct a universe which will be conformable with them. To prove that the first universe is unreal and the second is real is a temptation so irresistible that few philosophers have been able to withstand it. The question of how far the universes which they have constructed bear any relation to fact, and how far they are merely a reflection of the philosophers' wishes, is one to which no final answer can be given. It may be true that metaphysics is simply a process of finding reasons for what we wish to believe upon instinct; yet to find those reasons is none the less an instinct. Be that as it may, however, the belief that the universe is ultimately one through and through is a belief, which recurs like an underlying motif through all the various disharmonies of human thought.

It is, for example, the mainspring of Theology. Theologians believe that God is one and that God is good. They believe that the whole universe is a

creation of and an emanation from Him, that the period of our existence in this world is temporary and for disciplinary purposes only, and that we shall one day be reabsorbed in the all-embracing unity which created us. Not only will our differences from God then disappear, but so will our differences from each other. God will, in fact, become one with the universe which He created.

Schopenhauer and Bergson.—The German philosopher, Schopenhauer, also believed in the fundamental unity of the universe. For him the universe was the expression of a fundamental urge, which he called the Will, which objectifies and manifests itself in all the various phenomena of everyday life. The Will, in fact, is like a broad river, splitting itself temporarily into a number of individual rivulets, which will one day return to the all-pervasive source from which they sprang. The process of thought reveals for Schopenhauer, as it did for Hegel, the oneness and unity of the Will and the comparative unreality of the different thoughts, objects, individuals, institutions, and so forth in which the Will temporarily expresses itself. Schopenhauer's Will, however, differs from Hegel's Absolute in two important respects. It is not purely intellectual, but instinctive; it is not static, but changing, being, in fact, a kind of blind impulsion, incessantly thrusting, striving and expressing itself in different forms and in different directions. In the second place, Schopenhauer's Will, unlike Hegel's

Absolute, is inside the time process. There was a time when there was nothing but the Will. There will again be a time in which there will be nothing but the Will. In the meantime, however, matter is eliminated from Schopenhauer's world just as ruthlessly as it is from Hegel's. As the Will is conceived in spiritual terms, the objectifications of it in what appears to be matter may be regarded as belonging to the world of illusory appearances. Hence Schopenhauer's Monism also has the effect of eliminating matter from the universe.

So, too, does Bergson's. For Bergson the world is nothing but change. Reality is a kind of vital surge, of which continual change is the being and essence. We speak of a universe which changes, and the conception of all things as being subject to change is sufficiently familiar. But Bergson goes further than this. There is nothing in his universe but change ; there are, that is to say, no concrete things which change, because the existence of such things would be a denial of his assertion that there is nothing but change. Take any apparently concrete thing which changes, whether it be mental state or physical object, and strip away the changing part, and you will find that there is literally nothing left. We think, for example, of our changing mental states as if they were a number of beads strung along a cord, which is our own ego or personality, the ego to which as a whole, as we say, the changes occur. But this belief is a delusion. Search as we may, we never find the ego behind the states ; we only find the changing states.

Suppose that I endeavour by introspection to discover myself; what I am in fact aware of is a willing something, a feeling something, a hoping something, or a thinking something. I discover, in fact, a number of different mental and emotional states, but I do not discover any self behind them which binds them together, but which is other than they. If, furthermore, I concentrate on any one of these mental states and endeavour to discover the stable part within it to which the admitted changes occur, I am again baffled. Not only does the state as a whole change while I am regarding it, but there is no part of it which does not change. There is, that is to say, no stable part to which the changes occur.

We think of our mental life as a succession of changing states, not because there is not change going on all the time within the states, but because we only notice the change when it has become sufficiently marked to attract our attention. Our mental life appears to us, in short, to be composed of a series of successive mental states only because we attend to it in a series of successive mental acts. By so doing we cut it up, introducing artificial stops and gaps into the living flow of mental change, and obtain the illusion that it is composed of a number of states that change, when it is in fact a constant flow of changes.

Similarly with regard to matter. Existence in a world which appeared in its true nature as a continual flux, without features or distinctions of any

kind, would be, to say the least of it, difficult. In order, therefore, to facilitate action, we have evolved a purely practical faculty, of which the function is to make cuts across the stream of reality and to present it as a series of isolated and relatively stable objects. This faculty is the intellect, and matter is the outcome of the operations performed by the intellect upon reality. It is a conception formed for practical purposes only, and, when we try to conceive of reality in the guise under which the intellect presents it, we fall into error. The intellect was not evolved in order to enable us to ascertain truth about reality, and the view that it gives us of reality is, accordingly, in the last resort illusory. Reality then is a unity, a continuous homogeneous flow of change, and the differences between things, together with the apparently solid objects and stable mental states which these differences cause to appear, are misleading and unreal.

Thus all the views, whose main features I have briefly outlined, however much they may differ in other respects, are unanimous in pronouncing matter an illusion. Either they conceive of the universe as consisting of a number of independent spiritual units, like the Subjective Idealists or Spiritual Monadists, or they affirm its fundamental unity and stigmatise all apparent differences between things, together with the separate selves and objects which arise therefrom, as illusory appearances due to some flaw or finiteness in our mental vision. The universe besides being a unity, is furthermore

defined as a spiritual unity, and, although philosophers have differed as to whether this unity is intellectual, emotional, or intuitional in character, they are all agreed in rejecting the view that the universe is in any sense material. Here then we have a conception of the universe as uncompromising and as thorough-going as that of the scientific materialists. The latter interpreted everything in terms of matter, and suppressed mind or explained it away when it interfered with their interpretation; the philosophers regard everything as an expression of mind, and roundly denounce matter as an illusion when it gets in the way of their interpretation.

We have already touched upon certain difficulties which beset the materialist hypothesis; let us now see how far we can go with the monistic philosophers.

IV. The World as a Plurality

Objections to Monism.—The monistic position raises a number of distinct and well-known difficulties; there are also difficulties in connection with the arguments by means of which it is reached. Most of these difficulties seem to the present writer insuperable. It is proposed, however, only to touch upon those which have a special relevance to our enquiry. I want, that is to say, to consider how far the Monists are right in submerging the variety and multiplicity of the universe as we know it, and, in particular, the something whatever it may be which we call matter, in the all-embracing unity of mind, spirit or change.

Readers will have noticed that, as I have hinted

already, the monistic position in philosophy has many points in common with the orthodox position in theology. The Absolute is like God, in that it is all-embracing and universal, and that nothing outside the Absolute is truly real. It is unlike Him in the sense that it is neither personal nor moral. Moreover, it did not create the universe as a gesture of omnipotence ; it *is* the universe.

Now it may help to place in a clearer light the difficulties which beset any kind of monistic view of the universe, if we first consider these difficulties as they arise in connection with the theory of an omnipotent God.

Difficulties of the Orthodox Theological Conception. If we suppose that the universe is the creation of an omnipotent and benevolent God, it becomes necessary to ask how pain and evil arise. Pain and evil are either real or unreal. If they are real then God, who, being omnipotent, was bound by no limitations and constrained by no necessities, wilfully created them. But the being who wilfully creates pain and evil cannot be benevolent.

If they are unreal, then the error which we make when we think them real is a real error. There is no doubt that we believe we suffer. If the belief is erroneous, then it follows that God has wilfully called falsehood into existence and deliberately involved us in unnecessary error. It follows once again that God cannot be benevolent.

If we regard pain and evil as due to the wickedness

of man and not as the creations of God, we are constrained to remember that man himself is one of God's creations (God being conceived as all creative), and received his wickedness, or his capacity for it, from whom ? If we say that man had no wickedness to begin with but wilfully generated wickedness for himself, we have to face the double difficulty of accounting for (*a*) how man who is an emanation from God can will with a will of his own which is not also a piece of God's will, and (*b*) how a benevolent God could, assuming pain and evil to be a purely human creation, deliberately allow them to be introduced into a world that knew them not, when it was open to Him to prevent such introductions.

Those who hold the belief in an omnipotent, benevolent God usually endeavour to answer questions of this type by explaining that our time on earth is a probation, a period of disciplinary training, and that suffering is necessary during our probationary period in order that, through it, we may be purified and rendered worthy to ascend to a higher state of being. This higher state of being is conceived of as a heavenly paradise wherein we shall again be united with God. Pain and evil will then disappear and differences between persons will be merged in divine unity. (One is again forcibly reminded of Hegel's language when describing the Absolute.)

But if this be the justification of pain and evil, this the end and goal of our journey, what, we are entitled to ask, is the motive of the experiment ? In the end assuredly all will be unity and goodness ;

but so it was at the beginning. What then is the point of a process which involves the creation of pain and evil by the way, in order that its appointed end may be identical with the beginning ? Why should what is evil be allowed to emerge from what is good, even if it were possible for it to do so, for the sole purpose of again being merged in it ? And in any event, why should a perfect and omnipotent being create ? If he be perfect he can feel neither need nor desire, for desire implies a want of something that is not, and a perfect being can want for nothing. If, in short, he be perfect he cannot add to his perfection, and he can have no motive, therefore, for action.

It seems, indeed, to be impossible to explain the facts of the universe as we know it on the basis of this otherwise attractive theory.

The Problem of Error and Diversity.—But the arguments which tell against the belief in an omnipotent God, tell equally, though in a different form, against any attempt to explain the universe as an emanation from or as a creation of an all-embracing person or principle.

Suppose we assume the truth of Hegel's conception of the Absolute. The Absolute, we are told, is in everything, nay more the Absolute *is* everything and everything *is* the Absolute. The Absolute is a unity through and through ; it is completely real, and it is also completely true. Now, while this is the nature of the universe as it really is,

it is agreed that the appearance which the universe presents is entirely different. There appear to be many things instead of one thing; I appear to be different from my neighbour, he again from his dog; and falsehood and illusion appear to be as prevalent as truth and reality. How is it then, it may be asked, that difference and multiplicity, falsehood and error are evolved out of perfect unity and perfect truth? How comes it that the universe appears to contain many things, if the universe is in fact only one thing? It may be said that the apparent variety and multiplicity of the universe are temporarily generated out of the unity of the Absolute into which they will again be reabsorbed. But then the potentiality for such variety, or rather for the development of such variety was contained in the Absolute from the beginning, just as the potentiality for development into a chicken is contained in an egg from the beginning. But if this is the case, then the Absolute is not a complete unity, but a unity qualified by the potentiality for developing a multiplicity; which is only another way of saying that the multiplicity existed in the unity in an incapsulated or embryonic form all the time. If this is the case, the universe is just as truly many things as it is one thing. Nor will it help matters to say that the differences between things are unreal, being illusions born of our partial and imperfect vision; for, if they are unreal, then the mistake which we make when we think them real is a real mistake. Instead, then, of having to explain

how differences can be developed out of perfect unity, we have now to account for the occurrence of error in a world of perfect truth—a task equally difficult.

Difficulties in Views of Schopenhauer and Bergson.—The difficulties in the views of reality as a fundamental underlying Will, or as a continuous vital surge, the conceptions of Schopenhauer and Bergson respectively, are similar in type.

Schopenhauer tells us, for example, that the Will objectifies and expresses itself in all the various types of existence which make up the worlds of sense and of thought. Individuals and common objects, scientific inventions and works of art, beauty and goodness, are each and all of them manifestations at different levels of the Will. Thus, though every manifestation appears to be separate from every other, there is a fundamental unity which underlies all. But if the unity is really a unity, how comes it to develop the difference which the expression of itself in various forms implies? Schopenhauer speaks of his Will as if it were a broad, flowing river which scattered and dissipated itself into an infinite number of tiny rivulets. This metaphor we can understand if there exists besides the stream, a something to interrupt the stream and to cause it to disperse; but only if there exists such a something. In the case of Schopenhauer's Will there can be no such something, simply because the Will and its manifestations *are* the whole universe. The Will

cannot, therefore, be dispersed or divided from outside. If, however, it is internally divided, carrying the germs of all its various objectifications and expressions within itself, then it is not and never was a unity, but is just as truly many things as it is one thing,

Similarly with Bergson's *élan vital*, as the vital surge is called. The illusion of solid objects, Bergson tells us, is produced by the operations of the intellect, which for practical purposes carves them out of the ceaseless flow of reality. But, if you start with a ceaseless homogeneous flow which embraces literally all that there is, how can you account for the emergence from it of the intellect which thus proceeds to cut it about ? If the intellect is an expression of or an emergence from the flow, the flow must have been initially qualified by the capacity to produce it, carrying as it were the seeds of its own disruption within itself. But in that case it was never a true unity.

You cannot, in fact, have it both ways. If reality, as monistic philosophers assert, is a whole or unity, such that anything short of the whole is unreal and anything which impairs the unity illusory, then you cannot generate out of it variety, error and multiplicity. If, on the other hand, you do not make the unity responsible for the production of variety, error and multiplicity, then they must exist side by side with the unity, equally real with it, and, if you like, opposed to it. But in that event the world is not a complete unity. It must be

assumed to be at least a duality, and to contain not only the unity, but some principle other than the unity which opposes the unity and causes it to express itself in variety, as a river may be broken up and diversified into innumerable streamlets. We shall consider the practicability of this latter alternative in the last chapter.

We may summarise the results of the present chapter as follows :

Summary.—Most philosophers have endeavoured to eliminate matter from the universe and to prove that everything is mind. Their efforts have resulted in a universe that was either a number of independent minds or one unified all-embracing mind. As regards the first hypothesis we were unable to see how the different independent minds could communicate with each other, or, indeed, how anything could exist but the thoughts of the minds. Because of this difficulty most philosophers have embraced the second hypothesis. This view, which is called Monism, succeeds, if it can be established, in abolishing matter by showing that all the so-called differences between things, including differences between the knower and what is known, are illusory ; that there is, therefore, only one thing, and that, since thinking certainly takes place, thinking being the activity by means of which the whole process of philosophising has been accomplished, that one thing is mental. Matter, therefore, is an illusion.

Against this view we urged the difficulty of

accounting for how, if you start from one thing, you can explain the apparent existence of many things. We showed that to call the many things illusory or unreal did not solve this difficulty, since the illusion then became real and had to be accounted for on the basis of the unity. The appearance of variety in the universe could, therefore, only be explained on the assumption that the universe was at bottom not a unity but a duality. The view of those philosophers, therefore, who try to account for everything in terms of mind, seems to be as inadequate as that of the scientists who tried to account for everything in terms of matter. We seem, therefore, to be committed to a universe which is or contains at least two things.

In the next chapter I propose to assume that these two things or principles, without which it does not appear to be possible to explain the facts, are things or principles which, for practical purposes, we may identify with mind and matter, and to consider more in detail and in the light of the experience of our own psychology how they interact.

CHAPTER IV

THE NEW DETERMINISM

Introductory.—So far I have endeavoured to establish two positions, first, that the facts as we know them cannot be explained on the assumption that mind is only a form of matter ; secondly, that they are equally inexplicable on the view that matter is nothing but an illusion of mind. I have tried further to show that it does not in any event seem possible to account for the variety and multiplicity of life as we know it, on the basis of a universe which is in reality or in the long run one thing and one thing only.

In this chapter, therefore, I propose to proceed upon the assumption that there is such a thing as mind, to put aside for the moment the question of what else the universe may contain in addition to mind, and to consider what it is that we know of the nature of mind and of the manner of its working. In particular, I shall concern myself with the question, how far we are justified in supposing that the operations of the mind are free, in the sense in which we use the word free, when we speak of free will.

Logical Difficulties.—A question of some difficulty

meets us at the outset. In investigating the nature of the mind we are employing the mind to tell us about itself, and we must do this perforce, since we have no other instrument wherewith to conduct our investigation. Mind is, therefore, both judge and jury in its own cause, and it behoves us to be suspiciously on our guard against a too ready acquiescence in its findings. It is, however, unfortunately the case that, let us be as suspicious as we may, we shall never be able entirely to guarantee ourselves against error, since even our suspicions will be mental, and should they prove to be well founded, the mistrust which they will engender with regard to conclusions reached by mind, will, in virtue of the fact that they too are mental, apply equally to themselves. It seems, then, that we are at the mercy of mind throughout and have no alternative but blindly to accept its conclusions. One conclusion, however, at which we must not arrive is that it is the nature of mind to err, for, if it does, the conclusion by which we have reached this result, being mental, may itself be erroneous, and in that case it would not be true that mind errs. Thus the whole enquiry turns round in our hands, and there will be no point in our saying anything at all, seeing that anything we may say will be just as likely to be false as true. It will be seen, therefore, that unless we cleave strongly to the view that, if we reason logically from known experiences, we arrive at true conclusions, we shall lose ourselves in a maze of hopeless confusion.

Having made this preliminary observation, I return to the question of the extent to which mind is free. I wish to consider this question more particularly because there are in modern psychology a number of different tendencies, of which the combined effect is to throw serious doubt upon the so-called freedom of mental operations. It appears that we know much less about mind than we used to think that we did, and that, for the most part, its operations are dictated by instinctive forces deep down within ourselves, of which we are unable to give any rational account. We are determined, in short, not by our external environment but by a something which, even if it is to be regarded as truly a part of us, is both unknown to and uncontrolled by us. I will consider some of these tendencies separately.

I. Psycho-Analysis.

It is not part of my plan to enter into the evidence for psycho-analysis. Much of this evidence, important as it is, does not seem to me to prove the conclusions which psycho-analysts are commonly disposed to base upon it. The general drift of psycho-analytical interpretation is, I think, in the right direction, but the details can be subjected to severe criticisms. Some of these criticisms will be given in section II. below. For the present I shall content myself with sketching in broad outline the picture of our mental interior which the psycho-analysts have drawn.

The Theory of the Unconscious.—The most striking thing that psycho-analysts have to tell us about mind is that the greater part of it is, and must remain, unknown to itself. Just as only the smaller part of an iceberg is seen above the level of the sea, the bulk remaining hidden, so the greater part of mind normally remains below the level of consciousness. This greater part is known as the unconscious mind, or simply as "the unconscious." The theory of the unconscious is based mainly on the work of an Austrian professor named Freud, by whom, more than by any other, the foundations of psycho-analysis have been laid. There are other schools of psycho-analytical investigators, of which the most important is that of the Swiss professor Jung. Freud's theory is, however, at once the clearest and the best known, and the following represents in substance his view.

Freud presents us with a picture of the self which may be likened to that of two families dwelling upon different floors of the same house. The family on the first floor, which is the abode of the conscious self, are respectable, orderly, law-abiding folk, whose object is to keep themselves to themselves, to stand well with their neighbours and to preserve unsullied from the world their reputation for respectability. The ground floor, the unconscious, is occupied by a much larger family of a disreputable character. Many of its members belonged at one time to the first floor family, but were dismissed as being unfit for its society and like fallen angels sent to dwell in the dungeons below. They are primitive, passionate and

intensely selfish. Their one pre-occupation is the gratification of their desires, which are predominantly sexual, and, the more effectively to achieve this end, they endeavour to return to the first floor, where they hope to secure wider scope and more publicity. This endeavour is regarded with consternation by the first floor family, who, in their anxiety to keep themselves to themselves, have hired a sort of policeman and planted him on the staircase to guard the approach to their floor. This policeman is called the censor. It is his business to prevent any of the unruly elements in the unconscious, of which the conscious self would feel ashamed, from obtaining access to the conscious. Sometimes he is successful in his attempt and the primitive unconscious desire is kept under. Sometimes, however, he is unable completely to bar the way and the unconscious desire succeeds in making its way up and appearing in the conscious. In this latter event, however, the censor usually manages to purify the unconscious desire in the course of transit, so that, if an inhabitant of the ground floor does manage to elevate himself on to the first floor he has to submit, as it were, to a process of being cleaned up and made respectable on the way. This process of purifying unconscious elements which subsequently appear in the conscious is known as " sublimation." Sublimation may have the effect of altering an unconscious desire beyond recognition, so that an unconscious desire to elope with your next door neighbour's wife will appear in the conscious as a sudden aversion for pickled onions.

Freud holds that most creative activity in the realm of art and literature is a sublimation of unconscious sexual desires. It is the function of psycho-analysis to discover what are the unconscious desires of which the sublimated versions appear in consciousness. Unconscious desires which suffer from continuous repression by the censor, finding their natural path of ascent into the conscious obstructed, are turned back upon themselves, and, like a river which has been dammed, form a kind of swamp in the unconscious which is called a complex. This complex gives rise to hysteria, nervousness, melancholy and irritability, and the psycho-analyst claims that by the mere process of bringing the complex to light and so drawing off, as it were, the stagnant accumulations formed by repressed desires, he is able to cure the nervous manifestations which are so common in modern society.

I do not wish to enlarge any further upon Freud's conception, which is by this time sufficiently familiar. It will be sufficient to point out that, if only a small part of what Freud maintains is true, the thoughts and desires which are entertained in the conscious are sublimated versions of thoughts and desires of a different character, whose origin is in the unconscious. We are not responsible, therefore, either for the appearance of these thoughts and desires in the conscious, nor for the particular guise under which they happen to appear. Since Freud holds that the origin of every conscious thought and desire is to be found in the unconscious, it will be seen that in his view we

cannot be held responsible either for our thoughts or for our desires. They are determined by something inside us, which is, however, uncontrolled by us. The contents of the conscious, in short, are always and at every moment a distorted and sublimated edition of the prior contents of the unconscious, and since we do not know what is going on in the unconscious, it is clear that it at least must be outside our control.

II. The Theories of W. H. Rivers

The theories of Freud have been subjected to severe criticism. To discuss at any length, or even to refer to the arguments of those who do not accept the conclusions of psycho-analysis, would take us far beyond our immediate purpose. I propose, however, to give briefly the substance of the criticism levelled against Freud by the late Dr. Rivers in his celebrated book *Instinct and the Unconscious*. I single out Dr. Rivers' views for two reasons. They are important in themselves, and they have a special bearing on the question of the freedom of our conscious processes, which we are concerned to discuss.

Rivers' work constitutes, in some respects, a return to the deterministic attitude to the universe described in our first chapter. Rivers himself was primarily an anthropologist, and, secondly, a physiologist, and it may therefore be presumed that his tendencies and training caused him to be more familiar with, and possibly as a result more interested in, the body than in the mind. He seems, indeed, to have started with a natural predisposition in favour

of interpreting mental processes in terms of, or in the likeness of, bodily processes. In any event, it was in the direction of the body and of what was known to happen there that Rivers naturally looked for his explanation of those phenomena of repression from the conscious to the unconscious, and sublimation of desires ascending from the unconscious to the conscious, which suggested to Freud the queer device of his semi-human censor.

The Two Kinds of Sensibility.—Rivers' explanation is simpler and less dramatic.

Physiologists have found that our sensibility, or sensitiveness to physical stimuli coming from the external world, is of two kinds. These two types of sensibility are called respectively "protopathic" and "epicritic." Protopathic sensibility is connected with the earlier stages of race development. We may think of it theoretically as the way in which very primitive savages and very young children feel. It has two characteristics. Sensations of protopathic sensibility do not vary in proportion to the strength of the stimulus that provokes them, and they are not localised. Thus, if you were to apply to the arm of a person endowed only with protopathic sensibility a series of poultices of different temperatures, he would not be able to distinguish the hotter poultices from the cooler, nor, so far as his sensations of feeling were concerned, would he be able to tell whether the poultices were applied to his arm or to his leg. Epicritic sensibility, which is normal among civilised

people, shows, on the other hand, a definite relationship between the intensity of the stimulus applied and the extent of the reaction, and further enables us to locate the point of application of the stimulus.

Now it is clear that protopathic sensibility is of little value for the purposes of racial survival. A man would not be in a position adequately to protect himself from danger if he were unable to distinguish a pin prick from a sword thrust, and were further unable to tell what part of his person the danger threatened. Epicritic sensibility has, accordingly, in the course of evolutionary progress, come to supersede protopathic sensibility, so far at least as normal experience is concerned. Nevertheless protopathic sensibility is still normal in childhood, remains latent throughout adult life, can be revived by experiment or artificial conditions, as in the case of hypnotised persons, and emerges when normal control is removed.

Now Rivers maintained that the suppression by the censor into the unconscious of certain psychological elements was a process strictly analogous to the suppression by purely automatic physiological processes of protopathic by epicritic sensibility. The early life, both of the race and of the individual, is mainly instinctive in character. Instincts have many points of likeness to protopathic sensibility. When we react instinctively we react immediately, and we react with all our available energy ; thus a child may scream as vigorously when gently tickled as it will from the pain of a burn. Instinctive experience, therefore, does not make for efficiency in living

unless it is modified by and mixed with intellect. As the consciousness both of the race and of the individual develops, early instinctive experience is either fused with intellect to make up the composite whole of adult civilised consciousness, or proves incompatible and is suppressed unconsciously and automatically. These suppressed experiences remain hidden in the unconscious, but are liable to rise into consciousness whenever the later controlling experience is inactive, as happens, for example, when we are asleep. Thus in dreams, when these earlier levels of experience rise to the surface, we think and feel childishly, because we mould our present experience according to childish habits of thought and childish reactions, which, in adult waking life, are suppressed.

The Interpretation of Dreams.—The interpretation of dreams brings into relief the contrast between this theory of Rivers and the views of Freud. Freud attaches great significance to dreams as providing our chief source of information with regard to the nature of the unconscious. In sleep consciousness is in abeyance, and the censor relinquishes his duty of guarding its portals. Our dreams are, therefore, a direct manifestation of the unconscious. In the great majority of cases they are an expression of unfulfilled and repressed wishes, which we have refused to allow ourselves to entertain in the conscious, because, if we knew that we possessed them, we would consider them to be wicked ; and, if only we could remember our dreams exactly as they

occurred, we should be able to throw an illuminating searchlight upon the workings of our hidden selves. Unfortunately, when we wake up and try to remember the dream, the censor gets to work and profoundly alters the character of what we remember. Normally this alteration is one which is undertaken in the interests of respectability. We remember not the dream that we had, but the dream we would like to have had in our character of decent and respectable citizens. There is thus a distinction between what is called the latent content of the dream, that which we actually dreamed, and the manifest content, which is what we remember.[1] The task of the psycho-analyst is to distentangle the latent content from the manifest content, by stripping away the disguises with which the censor has enwrapped the dream.

One of the commonest devices adopted by the censor is that known as "symbolism." Thus we remember X when we dreamed Y; X, therefore, is a symbol for Y, and psycho-analysts claim to have drawn up and tabulated a list of the symbols most commonly used by the censor to disguise from ourselves the real nature of our dreams.

To the Freudian account of dreams there are two objections, from both of which Dr. Rivers' theory is

[1] In the account of Freud's somewhat complicated theory given in the text, one or two points of detail have been omitted in the interests of brevity. Strictly speaking, there are three stages in the formation of the dream as remembered: (1) the suppressed thoughts, images, and wishes which have found symbolic expression in the dream; (2) the dream as dreamed in which they are symbolised; (3) the dream as remembered after distortion by the censor. In a completely accurate analysis, (1) and not (2) is the latent content, (2) being the manifest content.

immune. The first is of a general character. In order to maintain the Freudian hypothesis that our dreams are the expression of our suppressed wishes, and represent their imagined fulfilment, psycho-analysts have been driven to an ingenuity of interpretation which would put a detective to shame. Anyone who is conversant with books on psycho-analysis must have experienced a feeling of amazement as dream after dream, apparently of the most innocent and irrelevant character, is shown to be a distortion of a suppressed wish for sexual, or as often as not for incestuous, intercourse. In particular, the psycho-analysts have perfected a controversial device, of which the formula known as the Œdipus complex is the best example, for enabling the conscientious interpreter of Freud's doctrines always to have it both ways. Thus if you dream X, evidence is afforded for the Freudian hypothesis ; if, however, you dream Y, Y being the precise opposite of X, evidence is equally afforded for the same Freudian hypothesis. The reader is, in short, left with the feeling that the same amount of ingenuity expended in any direction would enable anybody to interpret anything as a symbolised or distorted version of anything else.

In the second place Freud's dream interpretation involves, as indeed does every department of his theory, the intervention of the censor. The censor is conceived after the model of the conscious part of ourselves ; working in the interests of the conscious he deliberately sublimates and purifies the desires which we do not wish to acknowledge in consciousness. Yet

Freud speaks of the operations of the censor as if they were as uncontrolled and automatic as the processes of digestion, from which it is to be inferred that the censor belongs to the unconscious. We do not know how, when, or why the censor operates; although he guards the conscious, his guardianship is unknown to us.

The advantage of such a view as that of Dr. Rivers is that it enables us to treat the censor as apocryphal, by explaining all the facts which he was designed to explain without invoking his assistance. If we assume that, just as there are different levels of sensibility, namely protopathic and epicritic, so there are different levels of the nervous system, we shall expect to find that, just as in adult physiological experience, epicritic has come to control and supersede protopathic sensibility, so our grown-up ways of thinking and feeling will be normally on the surface, and will control and suppress our earlier childish ways of thinking and feeling. In sleep, however, the normal control of our adult experiencing self is removed. The earlier level of experience, which in waking life remains latent, then rises automatically to the surface, and we think and feel childishly because the level of our experience, which is for the moment predominant, is formed according to childish modes. In dreams, therefore, a lower level of experience comes naturally and automatically to the surface, and it is not necessary first to invent a censor, and then to imagine him temporarily off duty, in order to explain their emergence.

Other Objections to Freud's Theory.—An explana-

tion on similar lines is given of certain occurrences in waking life, which Freud's theory again attributes to the activities of the censor. Psycho-analysts have found their methods of treatment most successful in dealing with patients who are subject to nervous disorders. Melancholia, neurosis, and the various forms of hysteria so common in modern society, are all attributed by Freud to the existence in the unconscious of complexes due to repression by the censor. Although the complex itself remains undetected, its existence, if long continued, engenders a general disorder of the whole nervous system, manifesting itself in a morbid psychological condition.

Freud attributes to a similar cause such occurrences as the apparently accidental slips of the tongue or pen, with which we are all familiar. We fail to pronounce or stumble in the pronunciation of a certain word, because such a word is known by the censor to be dangerous, as being likely to disturb reservoirs of thought and desire in the unconscious, which had better remain hidden. We find ourselves, therefore, unable easily to pronounce or to write the words which have these significant connections. Both sets of manifestations, that is to say, both nervousness and hysteria on the one hand, and slips of the tongue or pen on the other, are, however, explicable on Dr. Rivers' hypothesis. In times of strain and stress, the higher and more developed level of experience, which characterises our normal life, is subjected to an undue amount of wear and tear. It tends, therefore, to wear thin ; in other

words, the balance which is normally kept between the suppressed earlier mode of thought and feeling and the developed later mode is destroyed, with the result that the former rises automatically to the surface. Hence, hysteria and nervousness are to be regarded as the characteristics of primitive forms of reaction to dangerous situations ; they are the relics of the manner in which our ancestors might have behaved when threatened with the dangers of the jungle.

Similarly with regard to the slips of tongue or pen. These again are symptoms of a lower level of experience, temporarily coming to the surface when the control of the normal developed level is weakened. Such weakening may occur either as a result of undue fatigue, or of the occurrence of some event which is specially calculated to arouse and evoke the experiences which are normally superseded. In other words, earlier levels of experience come to the surface, either when the control of the later levels is impaired, or when they themselves are accidentally strengthened. Hence, the way in which a person thinks and feels on any particular occasion is directly attributable to the particular level of thought or feeling which happens to be uppermost in the person at the time. In other words, the factors which determine the manner in which we think and feel are purely automatic. Emergence of the unconscious into the conscious, repression from the conscious into the unconscious, are, that is to say, purely natural events, as automatic and as little within our control as the processes of digestion.

The importance of this result cannot be overestimated. It cuts at the very basis of what is normally called free will. If one type of experience automatically takes the place of another; if the way in which we think and feel about things is, in the last resort, no more under our control than the growing of our hair and nails, are we not drifting into something suspiciously like the position adopted by the exponents of the Parallelist Psychology described in our first chapter? It is true that the Parallelist theory, in its later development, attributed all psychological events to physiological causes; it is also true that our present theory does not say that we think this or feel that because our liver is in such and such a condition. But it *does* say that we think this or feel that as the result of certain hidden psychological processes, which are as little within our knowledge and control as the physiological occurrences which do determine the state of our liver. Before enlarging further on the implications of this view, I will briefly describe one more tendency in modern psychology which leads in the same direction.

III. Desires and Impulses

Modern psychology has considerably altered our views as to the nature of what is commonly called desire. The subject has been extensively treated by Mr. Bertrand Russell, and readers are recommended for an amplification of the following brief account to his works, *Principles of Social Reconstruction* and *The Analysis of Mind*.

The treatment of the subject in *Principles of Social Reconstruction* is popular and non-technical in character. Mr. Russell begins by drawing a distinction between desire and impulse. The main features of this distinction are as follows :—

(*a*) Desires are for conscious ends. We are aware, or think we are aware, of what we want, and consciously desire it. Impulses are not directed to any specific end. Thus we desire to pass an examination because we envisage some good that we hope to achieve thereby. But the impulse to sing in one's bath does not involve the existence of any imagined goal or good beyond the immediate fulfilment of the impulse.

(*b*) Desires involve the aid of what is called the will to repress contrary desires which impede their accomplishment. Thus the desire to pass the examination may involve the suppression of the desire to spend the evening at the cinema. The indulgence of impulse does not involve the suppression of any contrary impulse.

(*c*) Desire frequently involves the lapse of a considerable period of time between the moment of conceiving the desire and that of its fulfilment. The examination is again a case in point. In the case of an impulse we gratify it either not at all, or immediately by acting upon it as soon as it is felt.

(*d*) The fulfilment of an impulse, *e.g.*, of the impulses to boast, to sing in one's bath, or to black somebody's eye, brings immediate pleasure. The

pursuit of a desire frequently involves the occurrence of intermediate pain before the object of the desire is achieved. Thus the desire to become a good skater involves many knocks in the process of endeavouring to satisfy it.

Now Mr. Russell's contention is that we enormously overrate the part which desire plays in determining our conduct and underrate the part played by impulse.

Reasons for the Neglect of Impulse.—There are a number of reasons for this tendency. One is man's belief that he is a rational creature. We like to think that we deliberately entertain desires for rational ends, and that our actions are chosen by us accordingly as being likely to promote the ends, which our reason conceives to be good. Thus Samuel Butler tells us that his father would never admit that he did anything because he wanted to. The chance remark goes home. All men like to profess ulterior motives for their actions, and, as a consequence, much activity, which is of a purely instinctive and impulsive character, is attributed to desires for consciously conceived ends of a kind likely to reflect credit upon him who pursues them.

Another reason for the neglect of impulse is that, when an impulse is thwarted, a desire springs up for the state of affairs which would have attended the indulgence of the impulse. Hence, in Mr. Russell's words, impulses " bring with them a whole train of fictitious desires ; they make men feel that they

desire the results which will follow from indulging their impulses, and that they are acting for the sake of these results when, in fact, the action has no motive outside itself."

Other considerations of a more complex character contribute to the neglect of impulse. It is very common for people to entertain false beliefs as to what it is that they really want. As a rule the objects which we represent to ourselves that we desire are of a more respectable character than those which we do in fact desire. Owing, for example, to the taboos which society places upon the indulgence of the normal sex impulses, we usually conceal from ourselves the real nature of actions springing from the promptings of our sexual needs, and believe them to be designed to secure objects of a more respectable kind. Psycho-analysis has at least shown that we can have desires of which we are unconscious, and that, through misinterpreting or refusing to acknowledge the real nature of our desires, we come to entertain false beliefs as to the nature of the objects which will bring us satisfaction.

It is a matter of common observation that the activities of our friends are frequently not calculated to promote the ends for which they profess to wish. A man will inform the world that he wishes to obtain X, and will himself believe that X is what he wants, yet his acquaintances have no difficulty in recognising that his actions are in fact directed to obtaining not X but Y, Y being considerably less reputable than X.

Occurrence of Secondary Desires.—Now cases of this kind possess two very interesting characteristics. In the first place, what we may call the real desire, which the agent refuses to acknowledge and of which he is therefore unconscious, is found on examination to be not a desire at all but an impulse in the sense described above. In the second place, a false belief as to the object of this real unconscious desire brings into existence another desire for the object which is *falsely* believed to be the object of the original unconscious desire. This other desire is called a secondary desire. Actions are carried out in obedience to this secondary desire, and, as a result, the part played by the unconscious desire or impulse in originating the whole series of events is overlooked, the series being attributed to the secondary desire instead of to the original impulse or real unconscious desire.

An example of Mr. Russell's will serve to illustrate this rather complex analysis. Let us suppose that a lover has been jilted. His natural impulse, or unconscious desire, is to revenge himself upon the object of his affections by cutting her throat, torturing her, or committing suicide and then proceeding to haunt her as a ghost. Being a decent member of a civilised society he not only does not do these things, but does not even admit to himself that he wants to do them. What he does do, is to go and shoot big game in Africa or to conduct investigations into Egyptian antiquities. He falsely believes, in other words, that the slaughter of lions or the discovery of sarcophagi is

the real object of his desire. Since, however, these activities spring from a secondary desire and not from the original unconscious desire or impulse, they provide little satisfaction, and the lover finds his life boring and wearisome. One day, however, he receives a letter informing him that the girl has been jilted in her turn. His original unconscious desire that the girl should suffer pain is thus gratified. Immediately the world blooms again, the shooting of lions gives intense pleasure and life palpitates with significance and interest.

Conclusions.—Two results emerge. In the first place most of our lives are lived according to secondary desires and not in accordance with our original impulses or unconscious desires. These secondary desires are generated by a false belief as to the nature of the object of the original unconscious desire, and they bring but little satisfaction. To this circumstance we must attribute the age-long lamentations of the poets over the vanity of human wishes. But the truth is, not that what we want brings little satisfaction when we get it, but that we never really wanted what we thought we did. Secondly, actions springing at one remove, in the manner described above, from an unconscious desire or impulse are falsely attributed to the secondary or conscious desire which has been generated by a false belief as to the object of the original unconscious desire.

It follows that most of our activities are really dictated by desires of which we are not conscious.

It is to these unconscious desires that I have hitherto given the name of impulses. They are to be distinguished from conscious desires by the circumstance that, whereas we do not know that we have an unconscious desire and entertain therefore no belief as to the nature of the object which will satisfy it, we do have a true belief as to the nature of the object of a conscious desire. It is the existence of this true belief that leads us to call the desire conscious. This belief is not, however, by any means necessary in order that the desire should exist, and since, as I have tried to show, our beliefs in these matters rarely are true, it follows that most of our activities spring from unconscious and not from conscious desires.

But if a true belief as to the object of a desire is not necessary, either for the existence of the desire or for action in accordance with it, we must profoundly modify our views as to the nature of desire.

This brings us to the account of desire contained in Mr. Russell's book, *The Analysis of Mind*.

Desire in Animals.—Mr. Russell begins his analysis by pointing out that, for the reasons given above, the common belief that an imagined end or object of a desire is necessary for the occurrence of the desire cannot be upheld. There *may*, of course, be a conscious prevision of an end, but this prevision is not the essential characteristic of desire. What is essential can, perhaps, best be discovered by observing the

behaviour of animals. A considerable part of modern psychology has been founded upon a study of animal behaviour. Human vanity makes it difficult for us to observe and recount with objective impartiality the processes of human mentality. We believe that man is rational, and we desire to think him virtuous, and, accordingly, any conclusions which tend to throw doubt upon man's rationality or virtue are viewed with a disfavour which leads to their unconscious rejection. Enquirers, however, have no interest in demonstrating either the rationality or the virtue of animals, and it is probable, therefore, that, by an observation of animals' behaviour they will reach truer conclusions with regard to what is taking place in their psychology than they are likely to do when observing their fellows. What modern psychologists have done is to apply to an increasing extent the conclusions formed from a study of animal behaviour to the interpretation of human psychology. It is surprising how far these conclusions can be pushed.

Now what suggestions has a study of animal psychology to offer with regard to the nature of desire ? In the first place it seems fairly plain that an animal does not consciously visualise an imagined object of desire when it acts, as we should say, in accordance with the desire. Thus it is difficult to believe that a bird, which in the spring time collects sticks and moss, weaves them together into a nest, and then lays eggs in the nest, is actuated by a prevision of the young birds which will one day be hatched

from the eggs, or by a conscious desire to produce offspring. Her actions suggest the prompting of an instinct operating from behind rather than the pull of an imagined object of desire which awaits her in front. Pursuing this line of thought let us consider the phenomena afforded by a hungry dog. The obvious and striking fact about a dog, the fact which causes us to say that he is hungry, is a certain fidgetiness or restlessness. Now a dog is commonly said to desire food because food is seen to bring to a conclusion the series of restless movements which caused us to say that the dog was hungry. But we do not observe the dog's desire for food, nor do we observe his hunger. All that we observe are the restless movements. The dog is unable to sit in one place; he sniffs the air; he is irritable, and saliva can be seen to drop from his mouth when food is placed in his neighbourhood. These activities form what is called a behaviour cycle, and they grow continually more marked in character until food is obtained. When food has been obtained a state of quiescence supervenes. The dog licks his jaws, moves lazily about the yard, and finally sinks into slumber. The above series of actions constitutes all that is observed by us in connection with the dog's alleged desire for food. Rationalising, however, on the basis of our observations, we say that the food, or rather the state of pleasurable quiescence which succeeds the food, was the object of the dog's desire, and that the origin of the activities described was the conscious prevision of food and the desire on the part of the dog to obtain the object which he had

entertained in his imagination, and the pleasurable sensations connected with it.

Desire as a Characteristic of Actions.—Neither of these inferences need, however, be made in order to explain the facts. It is not necessary to suppose either that the dog had a mental prevision of the pleasurable sensations associated with the state of quiescence, or that he was conscious of having achieved the object of his desire when the pleasant supervened upon the unpleasant sensations. It is not necessary, in fact, to assume the occurrence of any *mental* activity on the part of the dog from the beginning to the end of the process. If we keep strictly to the evidence, we are not entitled to interpret the so-called desire of the dog as being anything more than a symptom or characteristic of a certain number of actions carried out by the dog. We can, that is to say, explain all the phenomena associated with what is called desire in animals on the assumption that the desire is unconscious.

An explanation on similar lines adequately accounts for most of what is called desire in human beings. There is no need to postulate either awareness of an imagined end or consciousness of purpose, in order to explain the activities which are those commonly associated with what is called desire. What we observe in our friends when they are said to desire something is, as in the case of the dog, a behaviour cycle of actions. The cycle begins with a series of restless movements, and continues until

something is obtained which brings these restless movements to a conclusion, and causes them to be succeeded by movements of a different character normally associated with a state of satisfaction. It is not necessary, however, in order that this process may take place, that the person who is said to have the desire should possess a true belief, or indeed any belief at all, as to the nature of the pleasurable sensations or state of satisfaction which will bring his restless activities to a conclusion. On the contrary, as I have tried to show above, we have in the majority of cases either no belief as to the nature of this state of satisfaction, or a belief which analysis proves to be false. In other words, we are rarely conscious of the objects of our desires, and, when we think we are conscious of them, we are often mistaken as to their nature. Thus the phenomena associated with desire must be interpreted, not as proceeding from a pull from in front, but as the result of an instinctive push from behind, which impels us to action, even though we may be, and usually are, unconscious of the end and source of our activities. They do not necessarily involve, and in fact are rarely accompanied by, a true belief as to the object of the desire. It is only where such a true belief exists that we may call the desire conscious.

IV. The Emotions

I propose briefly to describe one more psychological theory before proceeding to indicate the conclusions to which this and the preceding sections point. This

theory provides an ingenious and highly interesting explanation of the origin and nature of our emotions. If it is correct in all that it asserts, we have no alternative but to conclude that our emotions are as completely outside our control as the preceding analysis has shown our sensations and our desires to be.

The case of the emotions is peculiar, in that they appear to occupy a sort of intermediate position midway between what are called bodily and mental phenomena respectively. We feel, for example, that the emotion of anger, while not so physical an affair as the sensation of heat, is less mental than the operation of doing a multiplication sum.

Now the special theory of the origin and nature of the emotions which I wish to describe is that put forward by the American philosopher, William James. It is called the James-Lange theory of emotion. According to this theory, an emotion is simply the experiencing on the part of the person feeling the emotion of a bodily change in himself. We perceive an external fact, and a bodily change of some sort follows ; our feeling of this change *is* the emotion. An emotion, therefore, is not, as is commonly supposed, an awareness in the mind of some fact outside ourselves ; it is an awareness of an event occurring in our own body. The feeling of fear which we experience when we see a burglar with a knife in his hand approaching the bed in which we are lying, is not a consciousness of danger awakened by the spectacle, but a consciousness of certain internal changes in our own body of the sort which

are graphically, though inaccurately, described in Biblical language as a melting of the heart like wax. A child does not cry because it is afraid ; it is afraid because it cries.

In order to illustrate James' theory, let us consider a concrete instance in more detail. What are the physiological events associated with the emotion of anger ? In the first place the adrenal glands excrete abnormally, thus increasing the amount of adrenalin in the blood. The excess of adrenalin, acting as a hormone or chemical messenger to all parts of the body, liberates a certain amount of the glycogen which is stored in the liver. The liberated glycogen is broken down into sugar, and in this form is carried in the ordinary process of circulation to the muscles, which, being furnished with an extra supply of carbohydrate, are thereby enabled to carry out the special tasks which, in the case of anger, they may be required to perform.

Now the whole point at issue in this controversy about emotion, is whether the feeling of anger comes first and causes the excretion of adrenalin or whether the excretion of adrenalin comes first and causes the feeling of anger. James definitely held the latter view. For him the feeling of anger was not an occurrence provoked by the sight of a man torturing a puppy, but the awareness of excretions by a gland. If this view is correct, then our emotional processes are caused by bodily changes, which are themselves due to external events. Now it is not suggested that we can control these bodily changes.

We may, for instance, tell a man not to be a coward, but it is meaningless to tell him not to let his hair stand on end when he sees a ghost. It would appear, therefore, to follow that the case of the emotions is but one more example of the dependence of the mental on the physical; an example, that is to say, of a purely automatic happening, of which the cause and degree of intensity are alike outside our control.

It may, of course, be urged that, though we are not responsible for feeling an emotion, we at least have it in our power to restrain its expression. "A man may feel annoyed," it may be said, "but he need not swear. He may feel angry, but he need not break the furniture." Even this argument, however, rests on a doubtful basis. We can, after all, only suppress an emotion in virtue of the will to suppress it. And our will must clearly be free, in the sense that it must be within our power both to exercise it and to obtain for it the victory over the unruly elements we seek to suppress, before we can speak of our ability to control emotion. And the question is, is the will, or indeed any mental operation of any kind, really free in the sense indicated?

To answer this question we must briefly sum up the results of the theories considered in this chapter.

V. Conclusions

Let us briefly recapitulate the conclusions of the different lines of thought which we have been following.

(1) According to the psycho-analysts all our con-

scious thoughts and emotions spring from the unconscious. We are responsible neither for their emergence in the conscious, nor for the particular form in which they emerge. Psycho-analysis may be, and no doubt is, open to serious criticism, but it is not necessary for us to accept the whole of the psycho-analytical doctrine to justify ourselves in making the very moderate statement that we know practically nothing at all about the origin of our desires, our emotions, or even our beliefs.[1]

(2) According to the view of Dr. Rivers, which we thought it desirable to substitute in some respects for the more speculative theories of the psycho-analysts, our psychological system, like our physiological system, is composed of strata or layers. The way in which we think and feel is dependent upon the particular psychological level of thought and feeling which happens to be uppermost at any given moment. The actions we perform will be conditioned by the way in which we think or feel, and, since the manner in which one form of thought or feeling comes to the surface and replaces or is replaced by another is an automatic process, similar in its uncontrolled character to a physiological process, such as that of digestion, our actions are determined and are not free.

(3) According to Mr. Russell's analysis of desire,

[1] I have no space in which to enter upon an analysis of the origin of belief, but it can be shown by methods similar to those already adopted that what we believe is as much the result of what we instinctively want to believe, as what we do is the result of what we instinctively want to do ; in other words, our thoughts are as much dictated by our impulses as are our actions.

an analysis which is in accordance with the predominant trend of thought in modern psychology, our actions spring for the most part from impulses rather than from desires. Impulses should be defined as unconscious desires. When our desires are unconscious we do not know what it is that we want, and our actions, therefore, spring from some prompting within ourselves which moves us, for reasons of which we are ignorant, in directions which we have not chosen.

(4) The theory of emotions, called the James-Lange theory, arrives at conclusions not dissimilar. Emotions do not occur spontaneously. They are simply the mental reflections of certain bodily processes within us. For the occurrence of these bodily processes we are in no sense responsible. Emotions, therefore, are outside our control both as regards their occurrence and as regards their intensity.

I do not wish to assert that any of the theories mentioned above is true. On the contrary, they are highly controversial. They do appear, however, to constitute a considerable weight of evidence in favour of the conclusion that our conscious mental phenomena, thoughts, desires, emotions, and so forth, are controlled by processes situated deep down in ourselves, whose origin escapes detection and whose workings defy control. It is these processes which govern the operations of such faculties as will and conscience, to which appeal is usually made by those who wish to vindicate human freedom. That this result follows can be quickly shown.

The Doctrine of Self-Determinism

(i.) *The Futility of Will.*—Let us suppose that a desire appears in our conscious, and that we are ashamed of this desire, and do not wish to indulge it. Now it is usually held that it is possible to suppress such a desire, or, at any rate, to preclude its indulgence by invoking the aid of what is called the will. Many thinkers have followed Aristotle in likening our desires to a number of unruly horses harnessed to a chariot. Each horse is anxious to pull the chariot in the direction in which it itself wishes to go, and is indifferent to the wishes of the rest. If, therefore, each horse is allowed to indulge its wishes unchecked, the chariot will oscillate violently between one course and another, and will very likely come to a dead stop. Within the chariot, however, there sits a charioteer. It is his business to control the horses, guiding and restraining them in such a way that, instead of dissipating their energies by striving against each other, they will pull harmoniously together and draw the chariot along a consistent and pre-arranged course. With this object he allows to each horse only so much indulgence as is compatible with the necessity of keeping the chariot to a straight course, and with the fulfilment of some part of the wishes of the other horses. Translating this simile into the language of human psychology, we may say that, in addition to the various self-regarding desires which pull us this way and that, there is also a desire for what is called the good of the whole. This desire

for the good of the whole may be compared to the charioteer, and its function is to dovetail the various, unruly, self-regarding desires into a harmonious system, so that no one desire obtains more satisfaction than is consistent with the good of the whole. The desire for the good of the whole may be termed the will.

This conception of the psychology of will and desire, which dates from Aristotle, accurately reflects the prejudices of common sense. Against it, however, the following considerations may be adduced. The will cannot be brought into play unless we desire to use it. Even if we admit that there is in our mental make-up a separate, independent something called the will, it is, after all, only a sort of engine, and desire is the steam that sets it going. Unless, therefore, we desire to use the will to suppress an unruly desire we cannot in fact suppress it. Now if the analysis of desire which has been given above is correct, the desire to use the will for this purpose is, like our other desires, a something for the occurrence and strength of which we cannot be held to be responsible.

What happens is that we are aware at the same time of two different urges or promptings to action. The first takes the form of an unruly self-regarding desire ; the second is a desire to suppress the unruly desire in the interests of the good of the whole. If the first desire is stronger than the second, there will be a failure in what we call will, and we shall be said in common parlance to " give way to our desire."

If the second desire is stronger than the first, we shall perform what is called an act of self-denial. This act of self-denial will, however, be, just as truly as the contrary act of self-indulgence, an expression of obedience to whatever happens to be our strongest desire at the moment. Hence, whatever the resultant action may be, it must be interpreted as a result of a conflict between two desires, a conflict in which the stronger will win.

The truth of this analysis has been obscured by the use of ambiguous phrases such as self-control and self-denial. These phrases suggest that in controlling a desire we are in some unexplained way acting in defiance of our nature. But it is only by means of our nature that we can defy our nature. If it were not natural to us to restrain our desire, we could not restrain it, so that in self-control and self-denial we are being just as truly self-indulgent as in an indiscriminate yielding to licentious and profligate desires.

The moralists of the nineteenth century, by encouraging us to restrain all self-indulgence except indulgence in self-restraint, are chiefly responsible for the erection of the distinction between desire, which is natural, and control, which is neither desire nor natural. If, however, our theories are right in showing, first, that the will cannot act except as the instrument of desire, and, secondly, that we are not responsible either for the strength or the direction of our desires, it is clear that the actions which proceed from them, whether as representing a victory of will

over desire or of desire over will, are equally and for the same reason outside our control. Praise and blame as applied to human activity are, therefore, irrelevant. If the self-denying desire is stronger than the self-indulging one we should take no credit, and, if the reverse is the case, we should logically feel no shame.

It follows that the use of what is called will to repress desire is not a matter for which we can be considered responsible. And what, in any event, is *will* itself, if it is not a desire to suppress other desires which we consider to be inimical to the good of the whole? If we desire to pass an examination, we *will* to suppress a desire to go to the cinema when we ought to be studying. But the *will* in this case is nothing more nor less than the expression of the desire to pass the examination, for which we are no more responsible than for the desire to go to the cinema.

(ii.) *The Irrelevance of Conscience.*—An analysis on similar lines may be applied to the operations of the faculty known as conscience. It has been commonly held that, in addition to the various desires which arise within us and clamour for satisfaction, there is a separate faculty called conscience, whose business it is to tell us when a desire may be honourably indulged and when it may not. Conscience is envisaged as a sort of barmaid of the soul. She countenances in the desires such indulgence as propriety permits, and then, "Time's up, gentlemen," she says, "no more drinking after 10.30," and

closes the bar. If gentlemen continue to drink after such a warning they get into trouble with the law. In other words, conscience gives them a bad time ; remorse follows, and steps are taken to ensure more seemly conduct in future. In virtue of its performance of this inhibitory function, conscience, which may be described as the faculty whereby we prescribe certain things to be right and certain things to be wrong, is regarded as the keystone of morality.

But morality is a structure built on the twin pillars of praise and blame. If you cannot blame a man for doing wrong, and cannot give him credit for doing right, morality goes by the board. Yet praise and blame are equally illogical where there is no responsibility for the actions which attract the one and provoke the other. If, therefore, the analysis described above does, as it appears to do, strike successfully at the basis of human responsibility, the feeling of shame at wrongdoing, which is the chief expression of conscience, is a feeling for which we are no more responsible than for the desire to do wrong. If the feeling of shame is stronger than the desire to do wrong, conscience will prove effective in inhibiting wrong action. If, however, it is weaker, we shall act wrongly. Once again there is a conflict between two contrary feelings, a conflict in which the victory will go to the stronger. For neither feeling nor for the strength of either feeling can we be held responsible.

It will be seen that this result follows when we reflect that, not only is the degree of intensity with which our desires appear in the conscious outside

our control, but so also is the form which they assume. Whether we accept the Freudian view of the unconscious, or the alternative theory put forward by Dr. Rivers, it seems clear that the form in which our desires come to us depends upon considerations of which we are completely unable to give any account. Whether a man will desire his own or his neighbour's wife is not for him to decide, and, what is more, should he be so unfortunate as to desire the latter, the extent to which he will act upon his desire, depending as it does upon the relative strength of what is called lust, on the one hand, and of the pull of what is called morality and considered decent behaviour on the other, is again outside his control.

The New Determinism.—We may say, then, that the theories described above do in their practical effect result in a new kind of determinism. We are determined, not by natural forces nor by an external environment, but by ourselves, and by the word "ourselves" I mean forces located within us, yet operating beyond the bounds of our consciousness, which do, in fact, determine the strength and the nature of the conscious phenomena of which we are aware.

A man, as Aristotle says, comes to have a good character because he has continually performed good acts. But he cannot continually perform good acts unless he is the sort of man whose nature it is to perform them, unless, that is to say, he has the good character from which the good acts necessarily

spring. This good character will, in its turn, proceed from and be formed by a preceding series of good acts. Retracing our steps by this method over the past history of the individual, we shall see that the actions which he performs at any given moment spring from, and are conditioned by his being the sort of person that he is at that moment, and, further, that he is the particular sort of person that he then is, because of the impulses which he experiences and the tendencies which he exhibits. If, therefore, we go far enough back, we can show that the tendencies and impulses which were originally his on the first occasion on which he acted, are those which really determined the whole subsequent tenor of his life. If we leave out of account the bearing upon the issue of theories of transmigration, we may say that the tendencies and impulses which the individual possesses on the first occasion on which he acts lie outside his control. These tendencies and impulses, which we are accustomed to call hereditary, acting in conjunction with and reacting from the environment in which he finds himself, determine his future actions. By these actions his character is formed. But, since he is responsible neither for his heredity nor for his environment, it would appear that he is not accountable either for the actions which these two factors jointly determine, or for the character which is formed by these actions.

Summing up, we may say that our thoughts, desires and impulses, are, in every case, the result of what we may describe as a push from behind, for the

strength and direction of which we cannot hold ourselves responsible. The doctrine of human freedom is, therefore, as seriously menaced by recent developments in psychology as by the mechanist philosophy described in our first chapter, which interprets all mental phenomena in terms of the interplay of material forces. In the next and final chapter I shall consider a possible method of escape from the conclusions reached by the above analysis.

CHAPTER V

The Theory of the Life Force

Introductory.—I propose in this chapter to offer a number of independent comments upon the subjects discussed in the preceding chapters. The views which I shall here put forward are, in a large measure, my own, and should not be taken as representing the opinion of any particular school of philosophy or psychology. The questions which I wish chiefly to discuss are those of the manner of the interaction between mind and body, and the extent to which freedom may be claimed for our emotional and intellectual processes.

As a basis of discussion I shall assume the truth of the four positions which I have endeavoured to establish in the preceding chapters. These were as follows :

(1) It is not possible to explain the facts of the universe on purely mechanist principles. It is necessary, therefore, to postulate the existence of some spiritual agency or vital force working in and through the process of evolution. (See Chapter II.)

(2) It is not possible to explain the facts of the universe on the assumption that the universe is, or is an expression of, one thing only. It is necessary,

therefore, to postulate the existence of at least two principles, in terms of a conflict between which such phenomena as error, evil and plurality may be explained. (See Chapter III.)

(3) It is not possible in the present state of our knowledge to resolve mind into matter or matter into mind. Whatever may be the fundamental analysis of mind and matter, we must make separate provision for each of them in any framework or scheme of existence, which we may endeavour to construct. (Chapters II. and III.)

(4) Our mental activities and emotional states are, in the main, the outcome of processes within ourselves, which are outside our control and of which we are unable to give any rational account.

The following essay in constructive speculation falls within the framework provided by the above four propositions. Admittedly it goes beyond the evidence in many directions, and should be regarded at best as plausible hypothesis rather than as demonstrated truth. At the same time it is contended that there are no known facts with which it is incompatible.

The Life Force.—Let us suppose that in the first instance the universe was purely material. It was chaos, deadness and blankness, without energy or purpose, and devoid of life. Into this inorganic universe there is introduced at some stage or other, and from some source unexplained, a principle of life, and by life I mean a something which is not expressible in terms of matter. At first blind and

stumbling, a purely instinctive thrust or pulse, it seeks to express itself by struggling to achieve an ever higher degree of consciousness. We may conceive the ultimate purpose of the life force to be the achievement of complete and universal consciousness, a result which can only be secured by the permeation of the whole universe with life and energy, so that beginning as a world of " matter " it may end as a world of " mind " or " spirit." With this object it works in and through matter, infusing and permeating matter with its own principle of energy and life. To matter so infused we give the name of a living organism. Living organisms are to be regarded in the light of the tools or weapons which the life force creates to assist it in the accomplishment of its purpose. Like the universe itself, each living organism is formed of a substratum of matter which has been animated by life, much as a length of wire may be charged with an electric current. It is a current of life which has been insulated in a piece of matter.

The life force is far from being all-powerful. It is limited by the matter which it seeks to overcome, and its methods are experimental, varying according to the stage of evolution which, in the persons of the organisms created by it, it has succeeded in reaching. Different types of beings best serve its purpose at different stages. Thus the mesozoic reptiles may be presumed to have passed from the evolutionary stage because they were not adapted to carry the current of life above the level which it had reached in them.

To the continual endeavour of the life force to

objectify itself in ever higher forms of life we must ascribe the continuance of the evolutionary process after adaptation to environment had been secured. Man is the latest evolutionary tool, but not for that reason the final one. If, as Mr. Shaw suggests, he can live longer, he may, like the Ancients in the last play of the *Back to Methuselah* Pentateuch, achieve a comparative emancipation from matter, which would constitute a real advance upon his present condition. Short of such an advance, however, we may, in due course, expect to see him consigned to the evolutionary scrap heap to join the *débris* of past experiments, in order that he may be superseded by beings better adapted for carrying out life's next advance. The inadequacy of man as an evolutionary tool is due not only to the limited and experimental character of the life force itself, but to the obstructive material sub-stratum of which he is composed. He is, that is to say, so far at least as his body is concerned, something which is infused with the life force, but which is not the life force. Matter, in short, though not able to resist the indignity of being used, as it were, against itself to further the purposes of a force that is striving to eliminate it, is enabled to exact a price for its unwilling service. And the price is that that portion of the life force which, when localised in matter, constitutes an individual, is, from the very fact that it is so localised, endowed with a measure of free will.

Origin and Extent of Free Will.—The point may

be made clear by a simile. Let us suppose that a broad flowing river finds in its course a line of rocks which obstructs its progress. The river will be broken up and diverted into an infinite number of tiny streams and rivulets. The energy and flow of these rivulets will be derived from the main stream, being, in fact, a diversion of the main current, but the direction in which they flow will be peculiar to themselves, being derived from the nature and conformation of the rocks which diverted the course of the main river.

Now, in order to account for the diversity and plurality of living beings, it seems to me to be necessary, for the reasons given in Chapter III., to postulate the existence of something which can obstruct the flow of life, and, by so obstructing it, cause it to disperse into numberless individual channels, and I wish again to emphasise the point that without this obstruction the multiplicity of living forms appears to be inexplicable. But just as the direction of the rivulets was in a sense other than that of the main stream, so I would assume that each individual possesses to some extent the power of choosing his own course or, in other words, the capacity for independent action.

On these lines I would endeavour to resolve the difficulties with regard to human freedom raised in the last chapter. Theoretically, that is to say, we are free, our freedom being due to the barrier which our material sub-stratum has inserted between the life force and its individualised expression in ourselves.

In practice, however, our freedom is strictly limited, owing to the fact that the life force, while not possessing complete mastery over the workings of individual consciousness, does, in fact, exercise a very considerable measure of control. I will endeavour to explain how and why this control is exercised.

Man's Inertia.—It is, I think, clear that, so far at least as human beings are concerned, we do not at all times carry out the evolutionary purpose for which we have been created with equal intensity and directness. Some of us, moreover, are obviously more efficient as instruments than others. It is, for example, difficult to believe that the ordinary man in the street plays as important a part in furthering the march of evolution towards higher levels of thought and consciousness as Plato, Goethe, or Tolstoi. Even the man in the street is far from always employing, in the service of life, such creative or inventive capacity as he possesses, and is content, for the most part, to maintain his normal condition of apathetic indifference to the future of the race, by thinking and acting along the lines dictated by habit and convention. He behaves, that is to say, like a sheep rather than like a man. Man, in fact, though an expression of a dynamic and changing principle, changes slowly and uncertainly, and tends continually to lapse into inertia by settling into the rut of habit. Given, then, the fact of man's slackness and comparative indifference to the purposes of evolution, the problem is that of impelling him, as frequently

and effectively as possible, to new and creative forms of thought and action.

The Importance of the Unconscious.—This problem the life force solves, in the first place, by the device of the unconscious. I conceive that the unconscious is that part of ourselves in virtue of which we are directly in touch with the vital force. It is, as it were, the link which connects the insulated current of life which constitutes an individual with the main stream. The life force communicates to the unconscious a series of thrustings and promptings which seek to impel the organism along the lines on which it is desired that it should proceed. These unconscious thrustings and promptings subsequently appear in the conscious as motives deliberately entertained and desires rationally conceived. Thus the instinctive thrust and urge of life within us is transformed into conscious phenomena, such as beliefs and desires, which we regard as the independent creations of our own personalities, and proceed to carry out in action in the full conviction of the freedom and independence of our will. By this means the life force continually renews the stream of life within us and yet allows us to remain in ignorance of its source. Thus it comes about that, overlooking our true position as mere instruments of life created by life for its own purposes, we regard ourselves as independent personalities possessing freedom of choice, and within limits, freedom of action. On these lines it seems possible to reconcile

the more or less universal belief in the freedom of the will and the spontaneity of thought with the evidence afforded by modern psychology, and described in the last chapter, which exhibits us as the slaves of impulses arising deep down within ourselves.

Our Subjection to the Life Force.—I have said that the phenomena of desire and emotion are to be interpreted in terms rather of a push from behind than of a pull from in front. This push is imparted to our unconscious by the life force, and only presents itself in the guise of a rational striving after objects deliberately chosen, owing to the fact that in the passage from the unconscious to the conscious its real character becomes obscured. Such, indeed, I conceive to be the nature of the relationship normally subsisting between the life force and the individual.

But there are certain events in the biography of the individual which stand outside this relationship. When these, the most important events of our lives, occur, we realise the full extent of our subjection as tools or instruments of a force which animates us for purposes of its own, and drops us when those purposes have been fulfilled. By the most important events in our lives I mean birth, love and death.

The phenomenon which we call being born is clearly outside our control. We do not ask for life ; we do not even wish for it ; we are presented with life whether we desire it or not. Nor are we allowed any discretion in the matter of the choice of our

parents. We are, as it were, pitchforked into life, not for ourselves but for the sake of something else. Similarly with death, which may be construed as our abandonment by the life force when we cease to be serviceable for the performance of the functions for which it created us. Death, like birth, is not chosen by us ; it is imposed upon us. We say goodbye to life as we are introduced into life not because we will or desire these things, but because something which is outside us, and yet within us, wills them for us.

Love, the device whereby the life force secures the continuance of our life in others, appears at first sight to fall more nearly within the bounds of our discretion. A moment's examination of the facts disposes, however, of this suggestion. The unwarrantable expectations entertained by lovers with regard to each other, the complete abrogation of the freedom of will and choice which is characteristic of love, and the general appearance presented by those in love of having been deprived of their powers of rational selection in order that, whether they like it or not, they may be hurled into each other's arms by something which is ruthlessly using them as its tools, all point strongly in the direction of the conclusion that in love, as in life and death, we are controlled by a force which uses us in the interest of purposes which take no account of individual happiness or security, provided only that through our agency the advance of those purposes may be furthered. It is in the same direction that we must look for the explanation of the frequently observed phenomenon of

marked physical attraction between lovers, conjoined with a complete incompatibility of outlook and temperament. The life force wishes its instruments to produce healthy children ; it does not care whether they are happy.

Genius.—A further device on the part of the life force for overcoming the natural sluggishness and conservativeness of the beings it has created is the occasional production of what we call genius. A genius is created in order to give conscious expression to the instinctive purposes of life. He is in a special sense a medium for the transmission of the current of life, and it is to the peculiarly direct and palpable character of the thrust and pulse of life within him that we give the name of inspiration. It is the business of the genius to point the way to a new and higher level of thought and conduct than that which has hitherto been achieved. Were it not for the great artists, thinkers and reformers, the world would stand still ; and, since a world, which was stationary in respect of its mental, spiritual or æsthetic life, would be as obstructive to the purposes of the life force as a world which was stationary in respect of the more strictly biological departments of evolution, the life force is under the necessity of adopting drastic measures to move it forward. In order, therefore, to counteract the natural tendency of human beings to stagnate, and their determination under cover of the names of orthodoxy and respectability to perpetuate the present rather than go to the trouble and disturbance which the carrying out

of the next evolutionary advance in thought and conduct involves, the life force produces a genius to do for the mass of men what they are unable to do for themselves. The genius from his very nature persistently challenges the accepted modes of thought and rules of conduct current in society, denouncing its morality as vicious and its thought as erroneous. This procedure is violently resented by men's natural disinclination to have their beliefs questioned and their habits upset, with the result that the genius is persecuted or crucified when he is a moralist, and starved and neglected when he happens to be an artist. Since, however, his thought and inspiration anticipate the next stage of the evolutionary process, the community in due course moves up to the level which he has indicated, with the result that the genius is posthumously ennobled by the descendants of the very men who declared him to be unfit for decent society.

The adoption by the new generation of the standards set by the pioneers of the preceding one leads to the formation of new habits of thought and conduct which, in course of time, become as stereotyped as the old. The ideas which were once new and living become in their turn dead and formal, so that the life force rapidly finds itself under the necessity of repeating the process of counteracting the natural tendency of mankind to stagnate, by producing a new genius to supersede the work of his predecessor. Hence evolution in the realms of thought, morals and art, like evolution in the more strictly biological

sense, appears to proceed not so much by the gradual accumulation of minute variations, as Darwin supposed, as by the sudden production of mutations or sports [1], whose appearance nothing in the previous history of the race has foreshadowed. A genius is, in fact, nothing but a " sport," in the psychological as opposed to the physiological history of living organisms.

He is to be regarded as a signpost set up by the life force to indicate to humanity the road along which it must travel. Like the unconscious he is a contrivance designed to prevent individuals from exclusively following their own desires and thereby frustrating the accomplishment of the purpose for which they were created.

The Duality of Mind and Matter. How Far can it be Carried ?—One more question remains before I conclude this brief sketch. I have endeavoured to show how the mind of the individual, which appears to be endowed with the privilege of what is called free will, is, in fact, constrained and directed by a well-designed and continuous pressure exerted from behind ; and my explanation rests upon the assumption of a fundamental dualism in the universe. I have postulated, that is to say, the existence both of

[1] The Dutch biologist De Vries attempted to show, with a considerable measure of success, that variations occurred not slowly and imperceptibly but with an abrupt suddenness, and that changes in species were due not to a gradual accumulation of minute differences but to the simultaneous occurrence in several members of the species of one of these sudden variations. They are known as " sports " or mutations.

a vital principle and of a something other than itself which obstructs it. But if the one be spiritual and the other material, how are we to explain their interaction ? Define matter as we may, do not all the difficulties to which we referred in the opening chapter, with regard to the influencing of the material by a something which possesses non-material attributes, still confront us, and have we not already called these difficulties insoluble ?

I have only space for a very few words on this question, but something must be said to rescue the views put forward in this chapter from the charge of complete impracticability. It is, I think, clear that, if the duality we postulate is a duality of substance, then the difficulties referred to *are* insoluble. If mind and body be really composed of two substances different in kind, then by no possible means can we conceive of their interaction.

But is duality of substance the only conceivable form of duality ? The principle of a plurality can be expressed as effectively in the forms of arrangement of things as in the nature of the things which are arranged. Instead of postulating the existence of two things different in kind, and being, as a consequence, compelled to consign the question of how they are to " get at " each other to the realm of mystery, we may think of the universe as being composed of one fundamental stuff which is arranged in two different contexts or ways.

Let us then suppose that one of the forms of the arrangement of the fundamental constituents of the

universe is what is called mind, and that this particular form of arrangement results from the operations of the life force upon the constituents. The issues raised by this suggestion are difficult, and I can do no more than briefly indicate them.

It will be remembered that in Chapter II. we saw that the modern analysis of matter had deprived it of the solidity in point of space and durability in point of time which nineteenth century matter was supposed to possess. Matter, in fact, was nothing but a series of momentary events, an apparently solid object being a succession of cinematographic representations of that object. Now philosophy gives us reason to suppose that the same event which appears in one context as a thing known to and by our senses, may appear in another as the sensation which, as we say, we have of it. Whether, therefore, one of the fundamental constituents of which the universe is composed appears as a material or as a mental entity, depends upon the context or form of arrangement in which it is taken. Arranged in one context it forms part of the series of events we call a mind ; arranged in another it forms part of the series of events we call an object. Hence it is now customary among certain thinkers to speak of the fundamental constituents of the universe as neutral particulars, the word *neutral* being employed to indicate that in themselves they are neither mental nor material, and that the properties of what we call mind and matter are attributed to them according to the context or form of arrangement in which they

appear. Thus mind and matter are both, as it were, secondary or derivative entities, coming into existence as forms of the arrangement of a more primitive stuff, which in itself possesses the properties of neither.[1]

Returning to the life force, let us now express, in language rather different from that which we have hitherto employed, our conception of its permeation and infusion of matter.

A mind, we say, is a certain arrangement of neutral particulars ; matter is another arrangement of particulars of the same sort. How is the special arrangement of particulars which is a mind brought about ? Let us consider what it is that happens when an electric current comes into contact with a collection of steel filings. The current does not literally enter into the filings as water enters into a tank ; nor does it change their substance. What it does is to cause them to arrange themselves in a certain special way. They stand to attention as it were and marshal themselves in a highly-ordered sequence and array. Filings animated by a charge of electricity are, in short, filings which have been gathered together into a special form of arrangement. In the same way I conceive that the life force entering a lifeless world, or, in other words, a world of neutral particulars, causes those of them with which it comes into contact to fall into that peculiar form

[1] I cannot here attempt to give the arguments for this rather difficult conception. Those who are interested should consult Mr. Russell's *The Analysis of Mind*, Chapter VII.

of arrangement which we call a mind. Mind, therefore, is not composed of a different substance from matter, not because mind is matter or matter mind, but because each is a form of arrangement of a stuff which is more fundamental than either. Of these forms of arrangement, that one which we call mind or life is caused by the life force coming into contact with the world of particulars, and is, in fact, that arrangement of particulars which the operations of the life force produce.

The question of the manner of the interaction of mind and matter is, as I have said above, of fundamental importance. I have not been able to do more here than to sketch in the most summary fashion the lines upon which a possible solution might proceed. If the direction indicated is the correct one, we are enabled to avoid two difficulties each of which is usually regarded as soluble only at the cost of pronouncing the other to be insoluble.

(1) We can account for the appearance of error, diversity and plurality by postulating the existence of at least two principles in the universe.

(2) We can show how beings possessed of characteristics which express both these principles (*a*) in respect of their bodies, (*b*) in respect of their minds, nevertheless exhibit in themselves the phenomenon of interaction between the principles. And we suggest that this interaction can take place because body and mind are not composed of different stuffs, but are composed of the same stuff differently arranged, the arrangement which we call mind being

due to the operation upon the particulars of the principle of life.

It is not of course pretended that the above suggestions constitute in any sense a solution of the mind-matter problem. In common with most philosophical theories, they lead to their own special difficulties, which are no less formidable than those of rival hypotheses. At the same time it is remarkable how many of the facts of existence they will be found to explain.

The application of the view of the universe sketched in this chapter in different departments of social and intellectual activity has been attempted in my *Common Sense Theology*, where certain theories of art, education and morals are derived from the fundamental life force hypothesis. How far this application can be termed successful it is not for me to judge. It is useless, however, to pretend that all the problems are solved by this hypothesis, any more than they are solved by others—if they were, philosophy would come to an abrupt conclusion—and only those theorists who supply the place of knowledge by converting their conjectures into dogmas could maintain that they had solved them. As I pointed out in the Introduction, the problem of mind and matter, like all fundamental questions, is probably insoluble. In the last resort the attitude we shall adopt towards it will be determined by temperamental and emotional factors rather than by strictly rational considerations. We

believe what we believe, not because we have been convinced by such and such arguments, but because we are of such and such a disposition. But if our attitude to ultimate problems is largely instinctive, we have also an instinct to seek rational grounds for the beliefs which we have instinctively reached. The promptings of this instinct have led to the writing of this book, and if it contrives to stimulate the same instinct in others it will not have been written in vain.

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